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AGRICULTURAL CLIMATOLOGY.

The most valuable contribution to the rural literature of this country made the present year is an extended essay on *Agricultural Climatology* by Mr. Lorin Blodget of the Smithsonian Institute, which fills over 100 pages in the Agricultural Report of the Patent Office for 1853. With commendable care, and no inconsiderable labor, the author has collected and collated a large amount of statistics illustrative of the climates best adapted to the growth of the great staples of the United States. The mean temperature of the several seasons (Winter, Spring, Summer, and Autumn), and of each month, the fall and distribution of rain and snow, and the general humidity and dryness of the atmosphere, are controlling elements in the production of all agricultural plants. Hence, Climatology and Agriculture sustain to each other the most intimate relations; and both may be studied with equal pleasure and profit by every one interested either in tillage or husbandry. A more inviting field for scientific research does not exist, nor one that promises more useful results. Researches in this direction will, ultimately, enable every farmer to adapt his crops, and his system of farm economy, to all the requirements of the climate in which his professional operations are carried on. He will wisely co-operate with nature in all his processes, instead of throwing away valuable labor and not a little capital, in violating her unbending laws. His efforts to acclimate plants that properly belong to a different zone will be practiced with increased success, in proportion as their natural habits and wants have been correctly developed, and are rightly understood.

Mr. Blodget has identified his name with American agricultural climatology in a way that will secure to it an honorable remembrance as one of the founders, and most successful cultivators of a new science. Instrumental observations relating to climates have been made in this country since 1738, when a mercurial thermometer was first used in Charleston. In 1742, observations were first commenced at Cambridge; and soon after in Philadelphia, and Williamsburg, Virginia. It is only, however, during the last thirty or forty years that this subject has attracted general attention; and still more recently has it received the advantages of a matured concert of action, under the appropriate direction of the Smithsonian Institution. Its plan of operations is said to be more extensive with uniform and critical instruments, than that of any other nation; but sufficient time has not elapsed since its adoption to collect the facts necessary to form a complete generalization of all our climatic resources. Enough, however, is known to satisfy every one who will take the trouble to investigate the subject, that we possess conditions of temperature in the spring, summer and autumn months, and in the amount and distribution of rain, which confer on this republic peculiar and unequaled agricultural capabilities. The climatology of Europe is best known; and it is with its leading statistics that our own are compared in the paper before us. In this connection Mr. B. remarks: "In comparison with Europe, we have a tropical summer and a high northern winter; and the capacity of our climates for vegetable growths, or particularly for animals, ranges through *all* climates, from tropical to extreme north temperate, for almost the same districts. The peculiar staples which attain the highest perfection here differ, therefore, from any other continental area, and embrace in the same localities those which are elsewhere widely separated, and appear only in distant climates. From this general semi-tropical summer, we find peculiar developments of native and acclimated products. The characteristic class is, in every instance, of sudden growth, exuberant, prolific; developing tropical characteristics in the preponderance of saccharine nutritive elements, and great perfection of essential oils and narcotic qualities.

"Indian corn, cotton, tobacco, cane, &c., which are elsewhere tropical, or natives of tropical regions, have a large range here; and two of these indeed, may be cultivated to the fiftieth parallel of latitude, or much beyond our northern boundary. Hemp, the vine, peach, &c., are similar in their requirements, and in their usual range in our climates."

Our limits will not permit extended quotations, or we should copy, *in intenso*, whole pages from this elaborated treatise. We are happy to know that it is published in a public document of which some 250,000 copies will soon be distributed over the United States. By writing to the representative in Congress from the district in which the applicant resides, or to the Commissioner of Patents in Washington, any one may, doubtless, procure a copy. The Report (of which we shall speak in another article) contains much valuable information beside this essay on Climatology.

In our tropical and semi-tropical summer months, so favorable to the growth of corn, cotton and tobacco, there is usually—the summer of 1854 being an exception—a liberal precipitation of rain. Without this moistening of the earth, a tropical heat is any thing but favorable to agriculture, as recent sad experience has widely demonstrated. Mr. BLODGET gives in two tables the mean temperatures of all important climates in the north temperate latitudes of both Europe and North America. At another time we will copy these valuable tables, and point out the climatic superiority of this continent for all agricultural purposes, that the readers of the FARMER may have the statistics for future reference.

At present, we will call attention to a few agricultural facts which could have no existence did not our climates afford peculiar and extraordinary advantages. According to the census of 1840, the corn crop of the previous year in the United States was 377,531,875 bushels. In ten years it had increased to 592,071,104 bushels. Since the census of 1850, there has been a large influx of emigrants from Europe, and many railroads constructed, to promote the settlement of new lands, and the extension of corn-culture; but allowing only the same ratio of increase in the last four years that was attained in the preceding ten, and our present annual corn harvest considerably exceeds *seven hundred million* bushels. The whole agricultural world presents nothing like a parallel to this; and yet, our capacity to grow this cereal is at least an hundred times larger than what is now developed. Other countries have soils as fertile as our own, but they no where have such continental climates.

We now command the cotton markets of the world, and annually export one hundred million dollars' worth of this important staple. Here are agricultural facts of much import. On what do they rest? Not on the fertility of the soils of the cotton-growing States, for they are generally thin and sterile; not on the superiority of southern labor, skill or capital, as compared with those of the British East Indias, but on the peculiar climates of the southern Atlantic and Gulf States. In the cheap production of human food and raiment, this continent has no successful competition, where its advantages are wisely improved. The writer has seen a crop of wheat and one of maize planted, grown, and harvested in a calendar year on the same land, in succession, in the State of Georgia; and a crop of maize may be planted and fully matured in Canada in about three months, while no six months in the climate of Great Britain will suffice for that purpose. In Texas, two crops of corn are made in the same field in a season; and its capacity for the production of sugar is much greater than is generally supposed. Indeed, from the Rio Grande to the mouth of the St. Lawrence, back to the Lake of the Woods; there is a unity in the diversity of climates which is wonderfully congenial to both tillage and husbandry. Hitherto, tillage has received far more attention than husbandry, but the needless neglect of the latter cannot last always. The native grasses on the plains near the base of the Rocky Mountains, which have for indefinite ages supported such countless herds of buffaloes, will yet furnish us with forage plants that will be to stock-growing, what our American corn is among cereals. European grasses may be best for Europe; but our peculiar climates demand, and have doubtless called into existence, plants adapted to grazing, superior to all others for the use of American husbandmen. It has long been a source of regret, that our numerous Agricultural Societies, and our National and State Legislatures, did so little to test the economic value of the most promising indigenous grasses of this continent. The United States alone have at this time about seven hundred million dollars invested in live stock, which is largely dependent on English grasses, and other foreign herbage, grown in uncongenial climates for their support. Unless something better than these can be found, the day is not distant when our native Indian corn will be regarded as the best forage plant known to American agriculture.—Skillfully managed, it will yield a prodigious amount of hay, compared with timothy; but it is a cereal, and not adapted to pasturage, being an annual plant, and not calculated to form a turf like the true forage grasses. Of the latter, this continent supplies many genera and species, to be met with in all the States and territories that lie between the Atlantic and Pacific Oceans.

In studying the agricultural climatology of this republic at Washington, who does not see the wisdom of connecting therewith the collection of all native grasses, with a view to test their value for grazing purposes, and for hay. The fact is not to be concealed, nor truthfully denied, that our pastures and meadows demand far more consideration than they now receive. They are a great national interest, and one that suffers much from almost universal neglect. They need to be stocked with plants better adapted to our climates and soils; while the latter should be investigated in a thorough manner, by the most competent men in the country. In this way, our systems of husbandry and tillage, our domestic animals and staple crops, may be steadily improved from year to year. Climates and soils are the foundation of all substantial progress in agriculture. Let these be generally understood, and every farmer will use the *right means* to attain the most profitable results. Climatology and chemistry, vegetable and animal physiology, are the true elements of our profession. Without these, there can be no agricultural science, and very little rural literature.

HINTS FOR NOVEMBER.

The close of the year is near at hand—seed has been sown—the harvest gathered—and now comes the labor of preparing for winter's cold and frost. In our last we suggested several ways in which coarse fodder could be rendered of more service as food; and also strongly urged the necessity of providing good and warm shelters for all your animals, for warmth to a certain extent is an equivalent for food.

The prudent farmer will avail himself of every fair day to provide a bountiful supply of muck, dry turf, leaves, and refuse of all descriptions, to mingle with the droppings of his yard. He will not suffer his cattle and sheep to run over his meadows and clover lots; and for the sake of saving a little hay, suffer ten-fold damage by the close grazing of young and tender shoots. He will see that the change from grass to hay be made as gradually as possible, that water in abundance is accessible to all his stock, and also salt and ashes—and for his fatting hogs, charcoal; cracks and crevices will be stopped—good fastenings

appended to gates, stable and barn doors; and he will particularly guard against the possibility of volunteer pruning of his orchard by hungry kine.

Young animals of all descriptions must be tended with extra care, and kept in a growing condition; for checks in early growth are rarely *recovered from in after life.*

Improve your time in rainy days by looking in occasionally at the school-house door; and don't stop there—see if the room is properly warmed and ventilated—ascertain for yourself whether the seats are comfortable, and duly proportioned to the respective sizes of the pupils. Grudge not the necessary books, for money is never invested in better stock than when it conduces to the improvement of the young; and be not vexed if your children should wear out their books as well as shoes. A pleasant word at night to the school boy and girl, who have been poring over thier books during the day at school—questions like these: What can you tell me about to-night that you have learned at school to-day? what more do you know than you did this morning?—we know from personal experience powerfully contribute to interest children in their studies, and aid a teacher in his arduous and too oft poorly-requited labor.

As the long winter evenings are coming on, be sure that you make your own fire-side more pleasant than elsewhere. Many—too many—have we seen turn a willing ear to the allurements of pleasure and dissipation, when better judgment condemned their folly, simply because the buoyant and elastic spirits of their childhood and youth were too much curbed and checked by the stern and thoughtless parent. But our limits forbid exhortation.

The illustration given represents the Archer of Heathen Mythology, who, being accidentally wounded with a poisoned arrow by Hercules, and the wound, which was incurable, causing him great anguish, Chiron prayed Jupiter to deprive him of immortality, that he might, by dying, be relieved from his excruciating pains. Jupiter assented to this request, and changed him into the constellation Sagittarius. The character of this sign is an arrow; and the figure, a Centaur, in the act of discharging an arrow from a bow—both are supposed to denote the hunting season. The sun enters Sagittarius about the 22d of November.

PATENT OFFICE AGRICULTURAL REPORT FOR 1853.

The first Agricultural Report made to Congress by the present Commissioner of Patents, Judge Mason of Iowa, is a document of 448 pages, and embraces about the usual amount of agricultural information annually dispensed through this channel. In place of giving the communications sent to the department entire in one place in the volume, they are often divided into many fragments in order to arrange each topic discussed under a separate head by itself. This plan has some advantages, as it throws together what is said by many correspondents on any branch of agriculture or husbandry; while it is defective in mixing up the practices and systems of distant parts of the United States, which are entirely unlike from an essential difference in soils, climates and kind of labor employed in farming operations. The first article in the Report is a brief and interesting account of the introduction of Domestic Animals into this country after its discovery, and settlement by Europeans, written by Mr. D. J. Browne, who occupies the Agriculture Room of the Patent Office.

In his second voyage in 1493, Columbus imported the first cattle brought from the Old World into the New. These consisted of cows, a bull, and a number of horses.

More than 100 years elapsed before neat cattle ceased to be very scarce with the early colonists. In 1636 cows sold in Massachusetts at from £25 to £30 each. Before the introduction of cotton culture into the southern states, beef, hides and tallow were largely exported from that region; and even now, stock-growing may be made profitable any where between the District of Columbia and the western bounds of Texas. The fact that so much attention is devoted to planting, instead of detracting from the great natural advantages of this extended range of mild climates, it protects the business from injurious competition, and furnishes additional encouragement to embark in it. The animal products of the country are now less, according to population and the wants of the people, than they have been in the present century. Ten years ago, our average annual export of Tallow exceeded ten million pounds; for the last two years it has been less than four million pounds. In 1845, 1846, 1847 and '48, our average annual export of Cheese was about fifteen million pounds; in 1852–3 it was only 3,763,932 pounds. Our exports of Butter have also fallen off about fifty per cent. In place of sending out of the country any considerable amount of Wool, we annually import in woolen goods nearly twice as much wool as there is produced in the United States. These brief statistics are interesting, and suggest the propriety of increasing our domestic animals, and extending both our dairy and sheep husbandry. Mr. Browne estimates the present number of neat cattle at 20,000,000, which at an average of $20 a head, amounts to $400,000,000.

Mr. Joseph Cornish of East Cranby, Connecticut, says, that it costs $25 to raise a steer or heifer in that county till it is three years old; and that the usual price of a good pair of steers is from $60 to $100. In Litchfield county in the same State, Mr. T. L. Hart estimates the cost of raising cattle till three years old at $30, and says that their best Devon steers, well broke, sell as high as $125. According to the statement of Mr. A. M. Higgins of Newcastle county, Delaware, about 1,800 head of cattle, having an average weight of 700 lbs., were fed in his district last year, and sold at from $7 to $8 per 100 lbs. He says that cattle have recently advanced from 50 to 100 per cent.; their supplies came from the West. Working oxen sometimes sell at $200 a pair.

Mr. Samuel D, Martin of Pine Grove, Clarke county, Ky., has furnished the Patent Office with an instructive letter on stock-growing in that excellent grazing and grain-growing State. He says that the cost of raising cattle depends very much on the treatment they receive. Stock cattle are there generally

fed in winter upon the stalks and fodder of corn which has been cut up in the fall, and the ears taken off. This food would be wasted if there was no stock to consume it. "Fodder, with the corn off, is sold at from five to ten cents a shock, and one shock will sustain ten head of cattle a day, though they would do better upon more." The editor of this paper has just sold his corn fodder, standing in the field, at fifty cents a shock. By comparing the price of this article in the District of Columbia, where the writer's farm is situated, with its value in Kentucky as stated by Mr. MARTIN, the reader will see how much better it is to grow corn near a good market than elsewhere. Mr. M. says that "cattle in that county are usually fed upon the sod of open pasture during winter." He adds: "Most of our beef cattle are sold by weight; if they are large and fat, 40 lbs. per hundred are deducted from the gross weight; and if small, 45 lbs. are deducted. I have just sold my Durham three year old steers at $60 each; and I have a lot of 'scrubs' (unimproved cattle), which are worth $25 each, of the same age. The word 'scrub' is used to designate our unimproved cattle; and the first cross with the Durham adds $20 to the value of a 'scrub' at three years old."

"The cost of transporting cattle to the Atlantic markets varies much at different seasons of the year. It is also influenced by the price of grain. With these variations, the following prices may be considered as approaching very near the truth: Driven on foot to Cincinnati, and thence by railroad to New York, takes 13 days, and costs about $13 each animal. Fed on grain, on the way, and driven on foot, seventy days to New York, early in the spring, costs about $13 each. Fed on early grass, and driven on foot sixty days to Philadelphia, or seventy to New York, costs from $8 to $9 each. Pastured on late grass, on foot, sixty to seventy days to Philadelphia or New York, costs from $5 to $6 each. The cost to Charleston or Savannah is about the same as to Philadelphia. The cost to New Orleans by steamboat is about $10 each. The cost of transportation is also influenced by the stage of the river and other circumstances."

Mr. MICAJAH BURNETT, of the United Society of Shakers, Pleasant Hill, Mercer county, Ky., states that "the society sold a lot of yearling steers this year at $30 a head, while those of same age of the common stock might have been purchased at from $10 to $15. Yearlings of the improved breeds, well kept, will weigh 1000 pounds. Thirty-one were sold a few weeks since in an adjoining county which averaged 947 lbs. each. At from three to four years old, they will weigh, if well kept, from 2000 to 3000 lbs., live weight." The Society has been 35 years engaged in the improvement of neat stock. Thoroughbred animals always command comparatively high prices.

The volume abounds in the pertinent remarks of intelligent, practical farmers, who reside in every state and territory in the Union; and it deserves a place in the library of all who appreciate the literature of American agriculture. While commending the document for the useful information which it contains, we cannot in justice to the great interest to which it is devoted, omit to call attention to the wisdom of trying a series of accurate experiments in the several branches of stock husbandry, as well as in agriculture proper, under the direction of the Commissioner of Patents, that his annual Reports, now certain to be printed by the hundred thousand copies, may furnish reliable statistics *in all agricultural processes*. These books on rural topics cost a very considerable sum, paid to a political printer; while not a dollar is given to either practical of scientific farmers to cover the expense of developing new truths in either tillage or husbandry. In voting $35 000 a year for agricultural purposes, besides the printing of the Report, Congress uniformly fails to give the Commissioner that discretionary power which is necessary to enable him to pay for such valuable matter as may be offered for publication. In a word, valuable and costly experiments in agriculture cannot be tried and reported for the press without adequate compensation; and as the national treasury is literally overflowing with money, and Congress appropriates it liberally, and too often extravagantly, why should not enough be given to render this Annual Volume, illustrative of the agricultural science and learning of a Nation of Farmers, a creditable document? The honor of our profession is concerned in this matter; and our public servants ought to be made to respect it when it is the subject of legislation.

THE INTERNAL COMMERCE OF THE WEST.

THE following interesting expose of the magnitude and importance of the internal trade of the Northern Mississippi Valley is worthy of a careful perusal by the cultivators of the soil. They need not be told that in every article enumerated below, the elements of the soil which conduce to the growth of the crops are annually removed to the amount of hundreds of thousands of tons. We have a soil whose fertility cannot be excelled; but the experience of thousands of years warns us to cherish our resources for manures, and apply them to the soil before the period of exhaustion shall have been reached—for it is far easier to preserve the fertility of any soil than to restore it when lost. How many of the farmers whose individual harvests have gone to swell the amount of produce conveyed on the Western rivers and Eastern canals to the seaboard market, anticipate the time when this productiveness shall cease, and are wise in time? Too many—far too many—of them, intent upon present gain, leave the future to itself, and bequeath to their children an impoverished soil. On the worn-out tobacco lands of the Middle and Southern States, great progress in the right direction has been made in the use of guano, lime, &c.; but better far if they had only carefully preserved all the manure made by the stock on their plantations, and converted the contents of their privies into poudrette, particularly preserving the urine.

An illustration of the value of night-soil, or poudrette, offers itself daily to our view as we pass an Osage Orange hedge which we set out last spring. A short time since we noticed by the side of a Maple tree set out at the same time in the line of the hedge, a short of an uncommonly vigorous and thrifty growth. At first sight we thought that some different

plant was there located, but upon examination it was the veritable Osage. The deep green of its leaves, which were nearly double the size of plants but a short distance from it, and the length of the shorts, nearly double that of adjoining plants, induced us to examine carefully the reasons therefor. Some years since a privy formerly standing in that place was filled up, and the plant in question had been planted in the extreme south-eastern corner. The reason now of its luxuriant growth and foliage was obvious enough. By the decomposition of the night-soil underneath the superincumbent mass of earth, all the elements of the growth and nutrition of plants were present, and in a suitable form for immediate use.

We are satisfied that our farmers and planters need not go to the guano deposits of the Pacific Ocean, and pay millions of dollars yearly for fertilizers for their soil, if they would but carefully save and husband the solid and liquid manures made upon their homesteads.

In the notice of an Agricultural School at Grignon, in France, and the farm attached thereto, in a recent English journal, it is said "that there is little or no outlay for foreign or portable manures on the farm. Guano has been tried, but poudrette is preferred, having been proved by experiment to be superior. The English visitor who gives the account attempted to persuade the professors, or those in charge of the farm, that there might be larger crops, and more profits secured, by the use of guano; but he was met by the assertion that the English farmer did not '*conserve*,' or economize the manure of the farm, like the French farmer." And in this respect the *Country Gentleman* pithily observes, "the American copies more after the English than the french pattern."

Let all your manure be kept from the sun and rains, and mixed with the rich black mud which the rains of former years have washed down into your swamps and low lands, or with the turf from your pasture lands. Let this be done perseveringly and systematically, and the drain of money to pay for fertilizers from abroad would in a great measure cease.

The following is the article referred to above, which we take from the *Cincinnati Price Current:*

"Commerce, in regard to business, is an exchange of products. Between two distinct nations it is, in respect to each, *foreign* commerce; but as to the parts of one country, it is *internal.* The government of the United States being constituted almost entirely to regulate and protect its intercourse with other countries (in other words, its external relations), takes notice chiefly of its foreign trade. By means of its revenue officers, it gives tables of imports and exports, and the specific articles exchanged with foreign countries. This is important, and shows the state of our balance with other countries; but it is obvious that *internal commerce* must be far the most important, for the foreign products we use are small compared with those of home production. Of late years this internal trade has attracted a proper share of attention, and long lines of internal communication have been constructed in all parts of the country to carry on her commerce, and carry the products of the agricultural States to the manufacturing regions, and the great cities of the Atlantic. The magnitude of their consumption of agricultural products may be known by observing that the communities (almost exclusively manufacturing) comprehend nearly five millions of inhabitants, and the cities of the Atlantic contain nearly two millions more. Then, we have a home population of near seven millions to be fed by bread and meat—carried by canals and railways from the grain States to the Atlantic States.

"The grain States lie almost entirely in the valley of the Ohio and the peninsular of the North-west. This includes Western Pennsylvania, with Kentucky and Tennessee. The surplus products of this fertile region constitute the sole *basis* of trade, carried on through the canals and railways of the West. For it is plain that the imports must correspond with the ability to purchase, furnished by this surplus; and that passenger transit follows, to a great extent, the business of a country. To illustrate the extent of this internal trade in the West, we propose to give a few general facts.

"First, we make the general *surplus* of the grain region. In general terms, it may be stated thus:

Production.

	Wheat. bush.	Animals. tons.	Sundries. tons.
Western Pennsylvania,	6,000,000	140,000	200,000
Ohio,	24,000,000	620,000	187,000
Indiana,	9,000,000	510,000	68,500
Illinois,	11,000,000	495,000	80,000
Kentucky,	5,000,000	550,000	74,200
Tennessee,	3,000,000	570,000	44,700
Michigan,	6,000,000	125,000	73,600
Wisconsin,	5,000,000	80,000	43,500
Population (now), 7,000,000.	69,000,000	3,100,000	771,500

Surplus.

	Wheat. bush.	Animals. tons.	Sundries. tons.
Western Pennsylvania,	3,000,000	27,500	35,000
Ohio,	14,000,000	112,800	92,500
Indiana,	4,000,000	76,250	22,000
Illinois,	6,000,000	75,000	20,000
Kentucky,	1,500,000	100,000	35,000
Tennessee,	-------	80,000	22,200
Michigan,	3,500,000	10,000	20,500
Wisconsin,	3,500,000	10,000	12,500
Population (now), 7,000,000.	35,500,000	491,550	259,700

"The above table is formed by taking for the *first* column the fair average crops of the several States; *secondly,* by reducing cattle, swine and sheep to tons, at their average weight; *thirdly,* placing under the head of 'Sundries,' tobacco, wool, butter, cheese, potatoes and whisky. Corn is excluded, because but a small part is exported in bulk, but mainly in the form of animal food and whisky. The *surplus* is calculated by deducting the average consumption of the existent population.

"We have, then, this result after reducing wheat to tons:

Wheat exported,	1,065,000 tons.
Animal food,	491,550 "
Tobacco, potatoes, wool, butter and cheese,	259,700 "
Hay (on river), estimated,	100,000 "
Iron (on rivers, canals and railways),	200,000 "
Domestic produce transported inland,	2,116,250 "

"This is domestic produce going from the place of production to the markets; but, on the other hand, we have quite an equal amount in the groceries, dry dry goods, hardware, manufactures, and numerous small articles, which enter into the traffic of the country. Then, we have in seven States and part of another, in the midst of the central West, a tonnage

in internal commerce equal to more than *forty millions of tons*. But there is another addition to be made to this which cannot be exactly entertained. It is the immense amount of tonnage in the transportation of articles at a small distance, as from the farmer to the village, and of a great class of heavy articles not brought into the above estimate. For example, we have coal, the transportation of which amounts in these States to *one million of tons*; lumber, brick, lime, salt, all natural produce of the country, which must amount in weight to as much more; adding these to the former aggregate, and we have, at least, *six millions of tons* entering into the commerce of the Ohio Valley and the North-west.

"This will be fully confirmed by a bird's eye glance at the *value* of this produce. Let us take, as an illustration, the commerce of the exporting ports of Ohio alone. The commercial statistics of the State enable us to arrive at this with some accuracy.

"In the Review of Trade and Commerce of Cincinnati for 1854, we have the following results:

Value of exports,	$45,432,000
Value of imports,	65,730,000
	$111,162,000
Add for non-enumerated articles,	10,000,000
Aggregate value of Cincinnati commerce,	$121,162,000

"Taking the most recent returns, some of which however, are not later than 1851, we have the fol lowing aggregates of Ohio commerce, viz.:

Total commerce of	Cincinnati,	in value,	$121,162,000
" "	Cleveland,	"	35,476,327
" "	Sandusky Dist.,	"	22,445.016
" "	Toledo Dist.,	"	30,934,891
" "	Portsmouth,	"	3,000,000
" "	Harmor,	"	1,500,000
" "	Several small points,		1,000,000
Commerce of Ohio, in value,			$215,518,234

"Doubtless the value of some portions of the merchandise has been counted twice; but, as an offset to this, there is a large value in cattle exported on foot, in produce sent *via* Pittsburgh, and in the interior trade from town to town not included in the above. As full confirmation of the above general views, we give the amount and value of certain agricultural produce arriving and departing from the above ports in the year 1853:

	Amount.	Value.
Flour, bbls.,	1,489,440	$8,936,440
Wheat, bush.,	6,160,440	7,776,484
Beef, bbls.,	47,625	555,000
Pork, bbls.,	419,195	6,560,837
Whisky, bbls.,	351,708	2,813,664
Bacon, lbs.,	5,680,791	440,857
Cheese, lbs.,	8,170,000	610,500
Butter, lbs.,	6,185,000	1,013,000
Wool, lbs.,	7,000,000	2,500,000

"These few articles of agricultural export from Ohio alone, and which comprise only those of bulk and strictly field produce, will illustrate fully the magnitude and importance of that internal commerce which is annually increasing with immense rapidity, and which will furnish full employment for all the railways, and canals, and roads, which are likely to be made."

S. M. Baker, a Pickaway farmer, has owned during the past year, upwards of three thousand cattle; his capital actively employed in his business being something over $150,000.

EXPERIMENTS IN IRRIGATION—KILN-DRIED CORN MEAL.

Mr. Editor:—I have noticed with some interest your late articles on *irrigation*. More thorough investigation will not only show the great advantages of irrigation, but also the fact that it can be done with *spring* as well as *soft* water.

Some persons have supposed that the water used must be poured upon the plant, or made to overflow it, or at least overflow the ground; whereas, the water should pass up through the soil by means of capillary attraction, thus supplying moisture in nature's own way, and in nature's own quantity. It is true that showers are beneficial on the *leaves* occasionally; but the greater portion of the water soaks into the soil, to be returned to the plant as it needs it by the capillary tubes.

I have a piece of ground of about two acres, on which I have been making some experiments the past season, having a stream of water from a *spring* passing through it. I plowed the ground (which was sod) in May last, into lands ten to twelve feet wide, and *four furrows deep*, by throwing each successive furrow on the top of the last, thus placing the sod at the bottom and the mellow dirt on the top, and breaking it up near twenty inches deep. By the way, I think much of this mode of subsoiling, as mine was all done with one pair of small horses. The dead furrows, or ditches, between the different lands were cleaned out with the hoe, and were filled with water at such intervals as it has been found necessary during the summer for the purpose of irrigation. The water was not permitted to overflow or run off, but settled into the soil, and supplied the plants by capillary attraction.

The result has been very satisfactory. All kinds of roots are surprisingly large and beautiful; and notwithstanding the season has been so dry that nearly all the gardens in the town have been ruined with the drouth, as well as many trees killed, still there are beets on these beds that will measure over two feet in circumference, and nearly as long, with carrots, parsnips and other vegetables in proportion.

One square bed of strawberries, set in hills eighteen inches apart, and transplanted about the middle of May last, produced more than half a bushel of berries that we kept an account of, besides what were eaten from the vines and destroyed by the birds. Some of the berries measured three and a half inches in circumference.

From one bed that contained nine square rods, or one-eighteenth of an acre, have been sold about $60 worth of vegetables during the summer. Besides, the *quality* of the vegetables has not been inferior to the quantity. Vegetables grown quickly, and without being retarded by drouth, are far more healthy and palatable.

In reference to the articles in the Farmer on the use of corn meal and hominy, I would simply remark that the use of these wholesome and palatable articles of food will greatly increase when the right plan is adopted to furnish them to the community in a proper state. Much of the corn meal that is now used is soured in a greater or less degree, and is therefore partially decayed and unwholesome.

I am now using in my family corn meal that was ground and kiln-dried a year ago last May, and hominy that was made and thus dried a year ago last November. Both are as sweet and perfect as when they were first made. They were dried with superheated steam, and by a process and kiln which I have patented, and which, while it does not scorch or color the grain in the least, will dry it to any degree required, with much less expense than has been formerly done. It can be placed in any mill, and will dry hominy, meal or flour at an expense of two to four cents per barrel.

When this plan for preparing corn meal shall be fully understood, corn will be worth more to eat and to ship than it is for whisky. Circulars will be sent free on application, and all the necessary information given with great pleasure to those who wish to know more about this process. I can send samples of meal and hominy like the above to those who wish to see that it can be prepared in such a manner that it will keep sweet, and save the necessity of going to mill twice in a week in order to have good sweet meal.

KALAMAZOO, Mich. H. G. BULKLEY.

AN EXPERIMENT IN POTATO CULTURE.

THE following account of an experiment made by an intelligent farmer of our acquaintance residing near this city, may not be uninteresting to our readers:

A certain number of rows (the exact number we do not recollect) were planted on the surface of the ground, after the usual preparation, and covered with earth by the hoe in hills. The ground between the rows was worked with a small one-horse plow during the season; and especial pains was taken that the hills should be well made, and that the soil should be kept free from weeds. Toward the close of the season they were found to be diseased; and when gathered, many of them were badly affected by the rot.

An equal number of rows, in another portion of the same field, was planted in the furrow left by running a plow lightly across the ground, and covered as before; but in the after cultivation care was taken that the ground should be kept perfectly level and smooth. When harvested, the tubers were sound and in good order.

What makes the difference between the two portions of the field more marked is, the seed planted in the former division were from a lot that showed no signs of disease the year previous, while the same kind of potato harvested the previous year were touched by the rot.

The inference drawn by him from this experiment was, "that the potato can not endure the hot sun of our climate, and that as far as in our power we must keep its roots and tubers away from atmospheric influences. The deeper the tilth of the soil, and the more level we kept the surface, the more healthy and vigorous would be their growth."

As an illustration of the want of accurate knowledge on the part of those who ought to be thoroughly conversant with every point pertaining to their vocation; he asked a neighbor who had raised thousands of bushels for this market, "which kind were the best for marketing use, and the most profitable to raise." "He did'nt know; he had'nt seen much difference in any of them." To satisfy himself, he last spring planted fourteen varieties of seed; and when harvested and disposed of in market, we hope to be able to give the results in full. *

NEW STUMP MACHINE.

THE following description of a stump extractor, which we find in the *Michigan Farmer's Companion*, will be found interesting to those who wish to clear their ground of stumps. From the description it would seem that any ingenious mechanic can construct one at small cost compared with those usually made:

"We recently paid a visit to the farms of JAMES BAILY and JOHN SPRAGUE, Esqrs., Troy, Oakland Co., for the purpose of witnessing the operation of a new stump-machine, or at least new in this part. It is a very powerful, effective machine, turning out solid oak stumps three feet in diameter with as much ease as a dentist would extract a molar. Its lever power is the screw. The directions here given will enable any mechanic to make one. First, there are two bed-pieces of best oak, 8 by 5 inches, 10 feet long, put together like a common crotch-drag, spreading 10 feet at the rear end. The cross-piece is inserted 2 feet from the forward end, and just behind this is inserted a strong bolt with a nut and screw, to prevent spreading. Three posts 6 feet between joints, and 5 by 8 inches, oak, are mortised into the bed-pieces, forming a triangle. The hind posts are 8 feet apart at the foot, measuring across the frame. The top of these posts are let into a head-block, 10 inches thick, 18 inches wide and 3½ feet long, made of the toughest oak. A knot would be better. A hole is made through this block, 3 inches in diameter at the top and 8 inches at the bottom. Through this is passed a common cider-mill screw, 4½ feet long, with a clevis made of Swede's bar, passing through the lever holes in the screw, to admit two holes for bolts an inch and a half thick. Then a chain made of ¾ inch iron, 4½ feet long, with a ring on one end a large hook on the other, for hitching to roots. The nut in which the screw works is let firmly into the sweep, (like an old fashioned cider-mill sweep), to the end of which a horse is attached. The screw is lowered sufficient to hitch; the horse is then started and the stump is raised out with great ease. Indeed it was wonderful to see with what power and ease it drew into pieces a solid oak stump; it being so firm in the ground that it came into parts rather than yield entirely at one hitch. The whole cost of the machine is $24. The screw of this machine was cast at the foundry of AARON SMITH & SON, Birmingham, Mich., which with the nut, cost $10. It was found necessary to insert two extra braces, reaching from the foot of the rear braces to the top of the forward one. This machine is designed especially for large stumps.

"Mr. BAILEY had just started KETCHUM's Mower in his meadow. The working of this machine is very satisfactory. The team managed it with great ease, cutting 10 to 12 acres per day. Haying with this and a horse-rake is but a pastime."

FARMING ON LONG-ISLAND.

Lotan Smith, Esq., writes to the *Journal of the New York State Agricultural Society* as follows:

"I thought that perhaps a little sketch of Long-Island, its farms, prospect of crops, &c., would be somewhat interesting. I therefore embrace the present opportunity to give you some detached account of this island, part of which I have learned from my own personal observation, and partly from information from persons living here. It would be in vain to attempt to give any thing like a full account in a single communication: therefore I shall only speak of a few things, in a detached manner.

"Long-Island has long been considered, by people living in this State, as one of the most beautiful as well as productive places in this State. It has long been celebrated for its thrifty farmers as well as their hospitality. These remarks I believe will hold good at the present day, so far as my experience goes, which, by the way, is not very great. I have not visited the whole island, but have seen farmers living in nearly every part of it where agriculture is carried on, and, so far as a man can judge from appearance and information, I conclude there is no great difference in practice, except in the different locations, as to the kinds of produce raised. Those living convenient to the cities and large towns follow gardening, while others living remote, depend mostly on raising the cereals. There need not be a surprise that there is so much land on this island uncultivated, when we take into consideration the fact that a large portion of the young men engage in sea-faring business. This class seldom come back on the farm, unless they amass a fortune in their business, which is frequently the case, and then many of them settle down on farms. Quite a large number have settled down on farms in different parts of the island within a few years.

"The whaling business has long been carried on from the different sea-ports around the island, with good success. Cold Spring, Greenport and Sag-Harbor, are the principal. The latter is far the most extensive. In speaking of farms and agriculture now, I shall mostly confine myself to the east end of the island, where I have the most of my information from; also where I have had the best chance for personal observation.

"I shall commence my remarks on farming with Southold, a pleasant village situated about 90 miles east from New-York, and five miles west from Greenport—the Long-Island railroad connecting these two places. This railroad runs a few rods north from the village, with a depot called Southold near it. This village consists, mostly, of farmers—dwelling somewhat detached—extending nearly half a mile in length. There is a post office, and store, foundery, and a few other mechanic's shops; three churches, an academy, a district school and one select school. The dwellings are mostly of modern dimensions, quite uniform in appearance, only a story and a half high, sided with shingles; there are, however, a few exceptions. There are two lawyers living in and near the place; one of them is a practical farmer. This village is situated about one and a half miles south from Long-Island Sound, and about half a mile north of Peconic Bay.

"The land here is nearly level: the farms are, mostly, quite small—many of them containing only from 20 to 25 acres of improved land; and small as the farms are, I am told most of those farmers not only support their families in the best manner, but many are laying up money besides. Every thing about them shows thrift and wealth. The soil is mostly sandy and light, and is only kept up by constant manuring, most of which that is used, except that made in the barn yard, is made from collecting sea-weed that drifts along the shores of the bay, which is quite extensive. This weed is collected and carted home and put in the hog-pens, and there manufactured into the richest manure, by that useful animal. Very great dependence is made on the manufacture of this kind of manure. Beside barn-yard and hog-pen manure, large quantities of fish are caught, called mossbonkers, which are said to be very fertilizing to lands. Formerly they were thrown into pits that were dug and slightly covered with earth, till they rotted, and then applied to the corn in the hills, or if for wheat, it was scattered broadcast over land, before sowing, and then plowed or harrowed in. I am told that, latterly, they scatter the fish over the field, for corn, after it is up, and work these in by the plow and hoe while attending the corn.

"In addition to the above named manures, some are using guano. Samuel Vail, Esq., who has had many years experience with Long-Island farming, informs me that the land produces far better crops now than it did 30 or 40 years ago. Formerly their wheat crops did not average above fifteen bushels per acre, while at the present time the yield is from twenty to thirty bushels, and corn in about the same ratio. He told me that in 1852–3 he raised over thirty-six bushels per acre of wheat. With both these crops he used guano—about 400 lbs. per acre—sown broadcast and plowed in: thinks he never raised quite as heavy crops from any other manure: thinks 300 lbs. of guano, per acre, sufficient for a crop. The present season the wheat crop will fall considerably below the average of the last two years. The straw was struck with rust and shrunk, which injured the crop very materially: as to the amount the crop has diminished I have heard no estimate made. The corn crops look remarkably fine, and promise the husbandman an abundant yield; the weather is quite dry, but the crop does not suffer by it."

FINGER AND TOE IN ROOT CROPS.

We give below part of an article contributed by Prof. Buckman to the Journal of the Royal Agricultural Society of England. His observations are based upon experiments with Wild Roots—*Pastinaca sativa* (parsnip) and *Daucus carota* (carrot), which were continued through three crops. After speaking of the process of culture he says:

Still the progress with the carrot as well as the parsnip was quite sufficient to show that it is within any one's power to renew both of these plants in a cultivated form from wild specimens by acting in conformity with the physiology of their growth; in short, as will presently be shown, not by growing them in soil suitable for them as wild plants, *but by constant-*

ly surrounding them with circumstances as totally opposite as possible.

But besides this, these experiments seemed to point out the way to a solution of the mystery of finger-and-toe in root crops, to which the parsnips and carrots of our garden culture have always been peculiarly liable. The time and mode of sowing the seed would naturally tend to an enlargement of the roots in the best examples of the resulting crop, inasmuch as spring sowing induces a more determinate biennial character; and as the roots of the wild plants are always more or less branched, it is but reasonable to suppose that the ramifications as well as the main root would equally put on cellular tissue in the majority of examples; and it is only by putting aside the cleanest roots for seeding—indeed, taking care to get your seed from plants which possess the qualities you require to the greatest possible extent—that you are at all likely to be successful either in ameliorating wild plants or in getting pure stock from acknowledged cultivated varieties.

A tap-root (*fusiform*) with a clear and unbranched outline is not *natural* to the parsnip or carrot, but can only be attained from wild plants by careful cultivation. May we not then conclude that the branching in cultivated roots (finger-and-toe) results from a reversion of these to a greater or less extent to their original wild form? In other words, inasmuch as in the passage from the wild to the cultivated state the branching of the roots becomes more conspicuous, may we not therefore conclude that, as finger-and-toe is a mark of cultivation in wild plants, so this deformity in cultivated plants is an evidence of reversion to wildness? These remarks, then, tend to show that the question is one entirely belonging to the inquirer into Vegetable Physiology; and it is, therefore, no wonder that chemical analysis, either of soils or crops, should have done nothing towards its elucidation.

Finger-and-toe will always be found to a greater or less extent in every field of roots, whether of parsnips, carrots, or turnips. Now, if we consider that these, as crops, are at all times derivative—that is, that they are altered states of original wild examples from which they sprang—and that the change from the wild state produces not only one form but several, which we term varieties, and that these sorts are only to be maintained by a rigid adherence to the circumstances which produced them, we must ever expect a tendency to some change; so that, though the mass may be maintained in tolerable purity, others will show a disposition to revert to the position from which they sprang, as varieties can never be absolutely permanent. In this case, then, finger-and-toe marks degeneracy.

Finger-and-toe will always prevail where the crop is derived from seed brought from a rich to a poor soil. Cultivation of roots presupposes that manure has been employed, the result of which is to cause a great increase in cellular tissue or succulency; hence, then, as rich soil is an elemant in advance, so poverty of land is equally a reason for retrogression; it is, then, no wonder that, as a general rule, there should be found more malformed roots in a poor than in a rich soil.

The deformity is likely to result where seed has been grown in the district in which it is sown for the crop. In cultivating wild specimens our experiments showed clearly that constant growth, under the same circumstances of seed and place, tends to degeneracy; and this is a matter fully proved by the experience of every one with every kind of crop: hence few venture to repeat the sowing of their own seed-corn to any considerable extent. On this subject a case has come before my own observation during the last two years, which may not be without interest in our present inquiry. A poor man in my own district cultivated a patch of white globe turnips for seed, and in the summer of 1852 he got so good a crop of seed as to induce him, on clearing off the first crop, immediately to try a second in the same ground. During the past summer, 1853, he again got seed, but much less in quantity, as the roots were all diseased. Now, as I constantly watched this piece of about a quarter of an acre, I am enabled to say that finer-and-toe was prevalent throughout the whole patch, whilst many roots had a tendency to decay, so that the flower-stalks dropped away for want of support. I have had no further opportunity of tracing this seed, but nothing can be clearer than that the second year's growth had degenerated from that of the first; and if, as is very probable, the seed be used again in the district in a similar soil, one cannot wonder at an unsatisfactory result.

Degeneracy must always result where a whole patch or field is indiscriminately put by for seed. Amongst every crop there are sure to be some examples unworthy of being progenitors; and as, with the continued cultivation of any sort, the constant want of keeping up those circumstances of care and attention by which original sorts may be produced necessarily ends in degeneracy, it is no wonder that any kind which has for a long time been a favorite in a particular district should ultimately lose caste. For seeding, the best examples should always be chosen, and these should be transplanted, for it is by these processes of culture that the impress of cultivation can be maintained. And again, this transplantation should in all cases be as far from other patches of the same tribe as possible, in order to prevent the influence of hybridism.

Degeneracy is usually a result in districts where the original species is a wild native. The soil, climate, and situation which are by no means fit for it in cultivation; it is on this account that so many of our esculents may be traced as natives of the sea-coast; the complete change of circumstances attendant upon their inland cultivation are just those which necessitate such a change in the whole growth of a plant as makes the sum of the difference between a wild and cultivated example; hence, as both parsnip and carrot in the wild form are constant denizens of the neighborhood of Cirencenster, neither of these roots can be cultivated twice with us in the same soil without presenting finger-and-toe in an aggravated form; and if the seed employed be from a degenerate crop, or cultivated at home, the evil is still more conspicuous. This, however, is less apparent in garden than in field culture, as in the former the ground is always dug deeper, and there is such a constant change of crop, mode of cultivation, seed, and addition of manure, that the circumstances are widely

different from those in which the species grows wild; besides this, as the quantity of seed required for the garden is less than that for the field, it is uniformly cultivated from good specimens with the greatest possible care; but I have observed that in my College vegetable-garden, where untill recently, the plan of cultivation has been but little in advance of that of the field, finger-and-toe is a prevailing complaint in the root-crops, and from what has been before advanced it will not be considered surprising, seeing that wild parsnips and carrots are weeds in the more neglected part of the garden.

Still there are circumstances in garden cultivation which strikingly point out that malformed roots are the result of a retrograde approximation to the wild state. If, for example, seed be sown with a view to get turnips very early, the major part of them frequently run to seed, and the bulbs of those that do not are mostly ill-formed, woody, and quite devoid of that succulency in which excellence consists. Now here, as the time of the germination of the seed, and consequently the period for its growth approximate more nearly to that of wild nature, it is not surprising that the crop should thereby assimilate to wild results. All specimens of root crops that seed prematurely, thus showing a tendency to annual growth, may be considered as degenerate, and will present the concomitant of finger-and-toe in the root.

Late-sown roots are liable to produce a degenerate seed. It is sometimes the practice to let a patch of late-sown turnips remain for seed; now, the fate of these is not to produce bulbs, and hence some are often so sown purposely for greens. Here we have the seed sown about the time that it is scattered from the wild plants; and it is no wonder that our result should resemble the wild plant in mode of growth, as in such cases we get a small but woody root, which is more or less branched; as, therefore, the object of the crop is the root, we must fail in this if we cultivate a degenerate form.

Different degree of liability to degeneracy in different species.—My observations lead to the conclusion that the smaller the amount of difference between the wild and the cultivated state of a plant the greater the tendency to ramification in the roots, unless the circumstances of the growth of the latter latter be widely different from that of the wild state. Hence parsnips on the farm of the Royal Agricultural College will not pay for cultivation; they are wild all around; and as we have seen how great the change by even two years' cultivation from the wild seed, so we have seen the tendency to reversion to their wild form rapidly develop itself by a continuance of the same circumstances. Carrots, however, in their cultivated form present a wilder difference from their wild state than do parsnips; they take a greater time to civilize, and consequently we should not expect them to revert to their wild condition so readily, and indeed it will generally be found that they die away if left to chance.

As regards turnips it will be observed as a rule that any sorts which have often been grown in the same land have a tendency to degenerate; hence finger-and-toe will in such cases prevail. New varieties at first maintain their form much better. Swedish turnips, in their hybrid nature being farther removed from the wild type on the same ground, will be found to present less tendency to finger-and-toe than the common turnips.

General Conclusions.—From the foregoing remarks it will be seen that the finger-and-toe in roots is not viewed by me as a disease in the strict sense of that term, but as a natural result of the early stage of change from wilderness to civilization. The enumerated experiments seem to show that finger and toe is the midway from wilderness to cultivation; and our observations upon the circumstances connected with cultivated root crops, that the malformation in them is the result of degeneration from cultivation to wildness.

SHEEP AND WOOL.

Wool at this time is twenty-five to thirty per cent. lower than it was last year in market, although it now sells as high as the average price for the last ten years preceding the clip of 1852, when wool raising was considered by our farmers as a paying business. The year 1853 was an inflated year. Almost all commodities of American product had for years been approaching a culminating point. Railroads, real estate, especially in our growing cities and towns, farming lands at large—all increased in a ration of value too rapid to be maintained. A foreign demand raised our grain to enormous prices, equal to the very highest of war-time and scarcity; and wool, unfortunately for the dealers and manufacturers, had the same tendency, though not to so great an extent. For the first time, in years, large quantities of wool were contracted for, all over the country, months in advance of the clipping season, at prices which resulted in heavy losses to the buyers. The market, of course, reacted, and now wool is down. Sales are dull, or if effected, they are at such low rates as to dissatisfy the producers.

Let us, however, look into it. Wool is still worth as much as it was in any one year from 1845 up to 1851, and more, by several cents per pound than during some of the interventing years. We know this experimentally, for we have grown and sold wool every year for the past ten years. Almost every winter of those years, up to 1850, millions of sheep in the aggregate, throughout the country, were slaughtered for their pelts and tallow alone. This was no great loss to the country, to be sure, for the most of them were miserable animals, yielding light fleeces of the lowest-priced wools, and were scarce worth feeding for mutton. Since then, beef has advanced largely in price, and mutton has followed it. Sheep have consequently increased in number; and for three years past, comparatively few have been so recklessly slaughtered for their pelts and tallow.

Now, the low price of wool begins to suggest the question to many, whether great numbers of sheep will not be taken to the shambles next winter for like objects? If our farmers, as in former days, chance to be discouraged by the present price of wool, and therefore set it down as a rule that sheep won't pay, of course millions of sheep will again be sacrificed. But we hope no such acts of folly will be committed. We American farmers, as well as others, are a very *spasmodic* class of people. When

a thing is high in price, we rush into it—when a thing is low, we sell out. That is the *rule*. We have known farmers run from wool-growing, when wool was low, in dairying, when butter and cheese were high, selling their sheep for a song, and buying cows at nearly double price. In three years time the tables turned upon them, butter and cheese fell, while wool came up again; and they, foolish enough to follow in the wake, just coming after in time so as to sell low and buy high at every turn of the scale!

We do not believe in such a system as this. Wool is a permanent staple of our agriculture, and as imperatively demanded by the population of the country as cotton, sugar, rice, beef, pork, or any other commodity. The tables of supply and demand will not always tally with each other. These will, at times, overbalance each other, and the intermediate parties who make the interchanges between the wool-grower and the manufacturer—that is, the wool dealers—gain and loose, as the case may be, in the fluctuations of price. In the long run they make, at least they ought to make, a profit for the use of their capital, and for the time and knowledge they devote to it. These men are a benefit to the wool-grower and the manufacturer both, taking his production from the door of the one, and delivering it at the warehouse of the other. It is his interest to pay all he can afford to the farmer, to secure his successive clips. It is also his interest to sell at fair prices to the manufacturer to maintain his custom. Occasionally there may be combinations among manufacturers and dealers to compel the grower to sell his wool at a low price; but these combinations are seldom got up, and they are always very hazardous; for, after all, the consumption of the manufactured cloth regulates the price of the raw material. Thus the farmer stands on an equal footing with the dealer and manufacturer.

Last year the farmer had the advantage, decidedly, The wool-dealers and the manufacturers lost money. This year they intend not to repeat the operation, but to make a profit if possible. This they are entitled to, and the farmer should be willing. It is not for the farming interest that the purchasers of agricultural staples should become poor. They are, in reality, the brokers between the producer and consumer; and without the existence of such a class as this to bring the producer and consumer together, agricultural products would instantly fall twenty per cent. in value. Therefore, unsatisfactory as the present price of wool may be, it is probably all that it is worth to the purchaser.

We do not thus write to influence the judgment of any man in the sale of his wool. Wool-dealing is not our business; on the other hand, we have our last clip of a thousand pounds, safely stored away, for which we intend to take the first favorable offer we can get, believing that it will not, within the next two years, be above the present price, and the interest on the money. Others may think differently, and if they can hold it without inconvenience, and too much risk, they may be wise in doing so.

What we intend mainly, when commencing this article, was to enter our protest, in view of the present depressed wool market, against the farmer's sacrificing his flock, and abandoning the business for any other branch of husbandry equally liable in its turn to fluctuation. Unquestionably the high price of wool last year induced many of our flock-masters to keep over many unprofitable sheep, those which were old, poor breeders, and badly wooled. These may now be very properly drawn out, led off, and sold to the butcher. Every flock should be well selected; none but substantial, healthy sheep, and among the females, good, promising breeders, with good fleeces, should be retained. Even in flocks devoted solely for mutton, a good fleece is an important item, as well as a good carcase; for at the season when mutton bears the best price, the pelt is at the highest value. A thorough culling of the flocks of the country the ensuing fall and winter, will very much reduce the numbers of their sheep; and the preservation of none but good ones in place of the bad, will add greatly to their future revenues, even at the same cost of keeping.

We sincerely wish that the American people would substitute mutton for beef and pork to a much greater extent than they have been in the habit of doing. Mutton is more nutritious and wholesome than beef even, and vastly more so than pork. In fact the latter ought not to be eaten at all, and especially the fat parts. Where on earth are there so healthy and robust-looking people as the English, of all classes? It is not simply the fogs and humidity of their climate which gives them their robust appearance and good looks; for people near them, with a climate almost like theirs, look very differently. So far as meats are concerned, they are mutton-eaters; probably more than half the animal food consumed in England being mutton. But it is not Merino, nor Saxony mutton—nor of the ragged, fence jumping creatures commonly kept over large districts of the United States. English, Scotch, Welsh and Irish mutton is mainly of improved breeds, well bred, and thoroughly cared for. These we may have in as high perfection as they, by obtaining the breeds, and bestowing little pains in their propagation and feeding. We are glad to know that the attention of many of our farmers is turning to that branch of stock, and we trust that the good taste and discrimination of consumers of meats, will give a substantial encouragement to their endeavors.—*American Agriculturist.*

THE WAR AND THE LINEN TRADE.

Out of a total import of foreign flax, averaging 80,000 tons per annum, Russia furnishes the United Kingdom with 60,000 tons, or two-thirds of the entire quantity; and of the 28,000 tons imported annually into France, about 13,000, or nearly one-half, is derived from the same source. It is not surprising, therefore, that the curtailment and prospective cessation of imports from Russia has materially checked the onward course of the linen trade of the allied nations. Dundee is certainly the most to be pitied, for its manufacture is chiefly of those coarse flaxen fabrics whose low prices will not admit of the substitution of a superior quality of fibre. Of 31,000 tons of flax imported into Dundee in 1854, 25,000 came from Russia, while of 8,400 tons landed in Belfast, but 4,100 were the produce of the czar's dominions; and, further, Belfast had 40,000 tons of Irish

flax to select from, of qualities peculiarly suited to the description of fabrics which form the bulk of the Irish manufacture, while Dundee, on the contrary, could avail itself of but a small portion of our crop, the mass of it being too high price, for the kind of goods there made.

Looking beyond the present crisis, our attention is arrested by the facts that the linen manufacture has been outstripping the production of flax, and that spindles and looms have been increasing in a more rapid ratio than fields of this valuable plant. If we refer to the statistics of British and Irish exports, we find that, in 1843, there was shipped from the United Kingdom, in round numbers, 91,000,000, yards of linen, and that the export of 1853 reached nearly 130,000,000 yards; the total value of all kinds of linen and yarn exported in the former year being £3,-702,052, and in the latter, £5,910,355. The increase during this decennial period was, therefore, in quantity about 43 per cent., and in value nearly 60 per cent. Of the raw material the import of 1843 was 78,000 tons, and in 1853, 9 4,000 tons, or an increase of less than 31 per cent. It is true that the production of flax in Ireland had more than doubled in the interim; but this increase has tended rather to the advantage of certain departments of the British and Irish manufacture, than to that of the trade as a whole.

In fact, what is not merely, under present circumstances, urgently required, but which has for some time been greatly wanted, is a liberal supply of coarse flax. Although other fibrous materials have been largely introduced of late years, and spun upon flax machinery—such as jute, which is now consumed in Dundee to the extent of 16,000 tons annually—yet these, instead of taking the place of coarse flax, have rather opened out new means of consumption, just as the introduction of alapaca has originated a separate branch of trade, without affecting the use of sheep's wool. So that the Dundee manufacturers are as anxiously looking for new sources of supply as the Manchester cotton spinners have lately been doing; and as a curious continuation of the parallel, both point to the same country—our great possession in the East Indies.

It is known that hot climates are not capable of yielding flax fibers of fine quality, as is instanced in the case of Egypt, whose flax is the lowest priced that appears in the British markets. On the other hand, the heat of the sun in these regions is peculiarly favorable to the production of seed.

Flax is already grown in India to considerable extent, but solely for the seed, of which about 100,000 quarters, value £300,000, are shipped annually to the United Kingdom, while the fiber, which would at least be worth half a million sterling, is converted to no use whatever. Surely, with the patent systems of steeping, and the improved method of scutching, lately introduced in Ireland, this valuable product might be brought to a marketable state. In other British colonies—such as those of North America and Australia—the high rate of labor is a serious obstacle to the preparation of flax; but in India it is far cheaper than in Ireland, and therefore no difficulty exists, except the insufficient means of transport from the interior. But the immense seaboard of the peninsula of Hindostan offers an abundant area for the production of flax, which could be readily shipped thence to Europe. We have shown that this question is of more vital consequence to Dundee than to Belfast; but still as we import 4,000 tons of coarse flax every year, it is a matter of some moment to us also, while it would in no way interfere with the home-grown article, which is of a quality much superior to any India could furnish. We are glad to observe, therefore, that our Chamber of Commerce has followed the example of Dundee, and is about to forward a memorial to Government, pointing out the importance, both to the British manufacturer and to the Hindoo ryot, of developing this latent source of profit.

Turning from this topic, we are naturally attracted by another, which the Russian difficulty has also suggested. At the late meeting of the Royal Flax Society, reference was made to the possibility, if not the great probability, of an insufficient supply of foreign flax seed for next year's sowing in Ireland. A greater calamity could scarcely occur to our staple manufacture than a sudden decrease in the area of flax cultivation at home. It is the very foundation of its prosperity, and the trade has increased *pari passu* with the extent of home production of its material. On the other hand, the Ulster farmer would view with dismay an eventuality which would suddenly deprive him of a certain source of profit. Fortunately, if our farmers have sense and foresight, they possess an easy and simple means of providing against such a serious chance. They have nothing more to do than to save as much of the seed of the growing crop as will furnish them with the quantity they require for next spring. And even if by that period the war be terminated, and abundance of Riga flaxseed be available, they will find a ready market at the oil mills for what they have saved. It is of importance also for them to consider whether it may not be advisable to save all the seed of this year's crop by rippling. The same circumstances which have caused a scarcity and dearness of flax fibre have produced a scarcity and dearness of flaxseed. Russia furnishes by far the largest proportion of what is converted, in the oil mills of the United Kingdom, into linseed oil and cake, both of which are so widely consumed. Crushing flaxseed is now 50 per cent. dearer than it was in the summer of last year; and if Irish farmers could not be tempted in former times to make an additional profit of £3 or £4 by saving the seed, perhaps they may now think better of it when they can make £5 to £6 per acre by so doing.

It is certainly a curious contrast which is presented by the two points we have been discussing. On one side, British India is exporting £300,000 worth of flaxseed, and throwing away £500,000 of fibre; on the other, Ireland is raising to the value of the 2,000,-000 of flax fibre, and rotting in the steep-pools £500,-000 worth of seed! It is Russia alone that has been benefiting by the ignorance of the Hindoo ryot and the prejudices and carelessness of the Irish farmer. No particle of the valuable plant is allowed by her nobles to waste. She sells us to the value of £3,-000,000 of fibre, and £900,000 of seed each year, and does not even take our manufactures in return. The Hindoo burns the fibre, and the Ulsterman rots the seed, which, turned into money, would buy our

manufactured goods, and largely help to free us from reliance on a State whose political system must frequently lead to a crisis like the present, and whose commercial policy must ever deprive us of half the benefits of international trade.—*Belfast (England) Mercury.*

WISNER'S PATENT WASH-TUB.

Of all the contrivances for washing or cleansing clothes, that recently introduced into our city by Dr. Hoyt, of Aurora, Erie county, in this State, is, in our way of thinking, the best. From its perfect simplicity, ease, and excellent manner with which, by the aid of one of these inventions, this most laborious though very necessary work is accomplished, we should pronounce it far in advance of the old, if not of any attempt ever invented for doing this species of labor. In using this language, heightened or exaggerated as to some it may appear, we do no more than adopt the sentiments of many of our citizens who have tried the article, and who have without exception spoken of it in much the same terms.

The plan adopted by Mr. Wisner in his patent is very simple, not differing essentially from that of the common wash-tub and board, to which in form and appearance it bears a most striking resemblance; and it is to this fact principally—this conformity in the construction of the machine to simple, natural, long-tried and well-approved principles—is due, in our judgment, one of the chief advantages of the whole thing. Divested as it is of all machinery in the shape of wheels, cranks, or otherwise, it cannot get out of order. For the same reason, we do not see how it can well be simplified or improved.

Among its qualities we would mention one other, respecting the amount of labor required for washing. The woman only employs it in the movement of a small lever or handle, neatly fitted for the purpose, and this is about all that has to be done in the entire work of cleansing the clothes.

To show what can be done by the aid of this little contrivance, the tests have been somewhat numerous and varied. We can only say, that we have been credibly informed that a washing can be performed in one-quarter the time usually employed, and with such ease otherwise that a boy or girl of twelve or fourteen years of age is competent to the performance of the entire task.

WISNER'S PATENT WASH-TUB.

Mr. Wisner having disposed of his right in the above tub, has no further interest in it whatever. Dr. Hoyt and his legally-authorized agents are now the only proper persons with whom to deal; and in their hands, we feel confident it must soon come into general use.

ON STABLE VENTILATION.

It is a fact, that at the present time, there are great numbers of horses affected with coughs, colds, and other diseases of the respiratory organs. This fact we must state in connection with another, namely, the affected animals are those kept in stables, not those kept out at pasture. Many people are astonished that at *this season* as they say so many cases of illness are found, but they do not always take care to

enquire how many occur in stabled, and how many in pastured animals. We think, however, that such an enquiry, or at least such a comparison should be made, because if disease be found to occur almost exclusively among horses in the stable, we are shut up to the conclusion that something connected with stable management must act as the predisposing or exciting cause. But the fact that diseases of the respiratory organs are more common in stabled than pasture fed horses, applies to all seasons alike. The fact is a fact in summer as well as in winter. Now it is not a satisfactory thing for a farmer or other horse proprietor to be continually requiring a veterinary surgeon to cure horses on the shortest notice, in order they may be at work almost without loss of time. The surgeon also, we think, would prefer being paid for keeping horses healthy, in other words he would rather prevent disease than undertake an uncertain cure. We have ever considered that farmers and veterinarians do not always act in the manner best calculated for the good of both, and yet we feel confident that in a general way they might do so.

Returning, however, to the case in hand. We have recently heard of scores of stabled horses being ill in town and country. In the great majority of cases, fortunately, the ailment is but trifling, and amounts to nothing more than a cough and sore throat, requiring a few days rest. The surgeon, therefore, is not called in. In other cases, the symptoms are mild in the outset, but become serious eventually, and the surgeon's aid is often required when disease has assumed a threatening aspect. Now, seeing that the present cattarrhal complaint appears almost, if not exclusively among stabled horses, is it not possible to explain its dependance upon in-door management, so as to indicate means of prevention ?

It is very generally supposed by those who do reason on the subject, that this and allied diseases are merely due to the unnatural heat of stables. We are fully inclined to admit that much harm may be traced to unduly warm stables, but we must not forget that the horses can endure heat as well as most animals. In the warmest climates he seldom seems to suffer from heat alone, provided he be not confined in stables. Now, so far as mere heat is concerned, we do not suppose that any of our stables are kept at anything approaching the temperature of those tropical heats, and even summer heats in this country, which a horse can bear with impunity. A horse, in fact, so far as experience teaches, can bear a high temperature alone, and as such ; but can he endure a high temperature and an impure atmosphere? He cannot without becoming diseased. Now, the co-existence of unnatural heat and bad ventilation are just what we find in very many stables at all seasons of the year. When the season, however, is cold, there is somewhat less danger to be apprehended from bad ventilation than when the weather is hot ; and yet we find that stablemen do not, as a general rule, make these corresponding differences in their ventilating arrangements which summer and winter respectively require. We have often, it is true, seen the windows of stables and certain upper air holes left open. But it is a well known fact, that cool air enters best and most effectively at the ground level, and hot air escapes easily from the top of a room. So that unless there be apertures below, we do not ensure a proper circulation of air by merely having open windows. We have also observed that stables are healthiest which contain fewest horses. There is more chance of one horse in an apparently small stable being properly supplied with air, than there is of twenty horses in a stable of larger size. Builders seem to forget that twenty horse stables require more air holes than stables containing one horse. A paper was read last winter at one of the Highland Society's meetings, by Mr. Barlow, in which that gentleman recommended each horse to be ventilated separately. He advised a hole or holes facing the head, level with the floor, and another aperture near the stable ceiling. The pure air would enter below and be inspired; the hot impure air would ascend and pass out above. This plan is not new ; it was recommended by the late Professor Coleman of London, and has been found exceedingly successful when practically applied. The holes can have slides or plugs of wood so arranged as to graduate the amount of admitted air to the utmost nicety. In hot weather they may be wide open ; in cool weather they may be partially, and perhaps sometimes almost completely closed. We are enabled to state that a well-known army veterinary surgeon. a pupil and admirer of Coleman, has tried this plan extensively, and he is known to have fewer cases of chest diseases in his own, than is usual in other regiments.

We are convinced of the fact that a due supply of pure air, be it warm or cool, is the great security against diseases of the respiratory organs in stabled horses. Supplying plenty of good air in the stable, places horses in-doors, as near on an equality as possible with those at pasture, and by doing so lessens the tendency to disease.

Some persons imagine, and with good grounds of reason in some cases, that stabled horses are liable to disease, because of being exposed to great variations of heat and cold during work hours, or when standing after being fatigued, or by the differences between out and in door temperature. At a time of year such as the present, however, these supposed causes of disease can scarcely apply, for we must bear in mind that horses at pasture are now those which probably experience the greatest changes in regard to the transitions from heat to cold, or from cold to heat. The days, for instance, have been moderately warm for weeks past, the nights have often been cold and yet these out-door horses are not those which sicken most extensively. Here, again, we seem driven to the conclusion that the confined stable air is the atmosphere at fault. We think less of its mere temperature in regard to what may be termed heat or cold, than we do of its impurity in consequence of imperfect renewal from without. When stables or other buildings for farm stock, are ventilated only by doors and windows, it frequently happens that the cold wind comes in so freely as to chill the horses standing near. This renders it needful to shut the windows or doors altogether, and the consequence is, a rapidly poisoned atmosphere, that fruitful cause of coughs, colds, and chest disease in general. On the other hand, when each stall is as it were separately ventilated, the aperatures are individually small, and may be so managed as to prevent all drougth. If

we are asked, then, to state the best preventive of disease of the respiratory organs in stabled horses, we have merely to advise the admission of cool, proper breathing air before and below the horse's nose, and the exit of heated impure air by an aperture placed at a higher level. Every horse and every man is continually exhaling a poisoneous gas, and common sense itself would indicate the importance of getting rid of this in the speediest manner possible.—*North British Agriculturist.*

WHEAT-GROWING IN MASSACHUSETTS.

Some twenty-five years ago, it was well known that wheat could not be raised in Massachusetts, except in a few favored spots on Connecticut river. The reason was the land was too old; that wheat could only be raised profitably on new lands. Yet wheat has always been raised in the "old countries," in England, in Italy, in Germany, in Russia, in as broad a range of latitude as our whole country, from New Orleans to Pembina in 49°.

But since the establishment of Agricultural Societies and the increased circulation of farming newspapers, in consequence of which it is no longer held as treason, or even as a high misdemeanor, to suggest new hints or express new ideas upon the business of farming, it has been really suggested that wheat might be raised on our soil, and the experiment, bold as it may seem, has been tried. The result of the experiment is, we believe, that wheat, though not considered so certain or so profitable a crop as corn, may, notwithstanding, be raised to advantage in the State.

We believe it is a fact, and rather a singular one, of which we shall presently suggest the cause, that in no part of our extended country, with all its variation of climate and diversity of soil, have so good crops of wheat been raised as England. From Maine west to Iowa, and from Virginia north to Michigan, we think there has been no tract of country that has produced on the average as much wheat in quantity, as in some of the wheat counties in England, Kent for instance. In Mr. Colman's book on European Agriculture, though he says that in some statistical works 26 bushels have been put down as the average, and though there are persons who insist that it should be put lower, yet he could never find the farmer who would allow his own yield to be at the low rate. He says that under good cultivation he has rarely known it less than 32 bushels. He has found it 40,—and is informed on the very best authority that the yield is often from 56 to 64. Indeed, he reports instances greatly exceeding that, where it appeared that 38 and 40 bushels were severally raised by Mr. Barclay, M. P., and a Kentish farm laborer represented that about 35 or 40 bushels are raised there, as an average crop. We believe our best wheat crops have been in Michigan, and in some parts of Wisconsin, Iowa, and Northern Illinois. But the average in the best of these would not come up to the Kent county standard as we have stated it. In Virginia, it is greatly below it.

As we have such a variety of climate in the wheat-growing districts, our short-comings must be attributed to one of two causes, soil or seed. There are two principal requisites in soil, for wheat. According to the opinion of most farmers, the soil should be rather a stiff, tenacious, clayey soil, and not mellow, light, or loose. We think it should not be too rich also. In a mellow, light, and rich soil, it makes straw at the expense of the grain, But the main requisite in the soil for ailment of the plant, is phosphate of lime. To this condition or to the seed, or to both, the greater success in England, in wheat-growing, is to be attributed. England is a limestone country, and the farmers use bone manure, which furnishes the phosphate of lime, on their fields. The most of the western wheat-growing lands are in a limestone country, but the soil is too light and mellow, favoring straw too much. So much for the soil. Now every farmer knows that there is a great difference in the measure of different kinds wheat grown on a given number of stalks. In some kinds the kernel or berry is larger and heavier, and in some kinds, there are a greater number of kernels to an ear, than in other varieties. Let the best kind be selected, that which is of the best quality, and bearing the largest ears, the Kent county wheat, if it may be procured, or some other productive variety, and let it be sown in sufficient quantity, (our farmers do not seed so heavy as the English, our rule being 1¼ to 1½ bus. to the acre, the English 2 to 2½) on a tenacious, stiff, soil, not too rich, only in good heart,—supplying to the ground those articles which make the constituents of the plant, and if fall sowing, on a northern declivity, early in September; and we cannot but think the product will be materially increased.

As to seed, the Siberian wheat is much approved in some of the wheat farms in Iowa. Others use what they call the Ohio white, a bald wheat with white husk. In other parts, the variety known as Club wheat, having the kernel set horizontally on short ears, is preferred, for the reason that it is there considered not liable to the rust, which has greatly shortened the crops of other varieties. The Winter Blue Stem is also raised with success, even on quite light lands, inclining to sand.

Mr. Colman names several varieties raised in England, and their product in certain fields, as follows:

Essex Brown, rate 40 bushels	64	lbs.	per bushel.
Surry White, rate 36 bushels	64	"	"
Brown, (called clover,) rate 40 bushels	63½	"	"
Snow drop, White, rate 39 bushels	63	"	"
Burwell Brown, rate 45 bushels	63	"	"
Whittington White, rate 38 bushels	62	"	"

W. Miles, Esq., raised 48 bus., 42 bus., 2 pecks, 47 bus., 35 bus., 3 pecks, and 49 bus.

P. Pusey, 37¾, 45½, 47½ bushels. Samples of the whole field. W. L. Kidd, M. D., of Armagh, Ireland, obtained at the rate of 50 bus. of 62 lbs. per acre, and there were larger crops in his neighborhood. The wheat was red wheat. Quality such as to command the highest price. The soil was a stiff clay recumbent on limestone.

Mr. Colman mentions other products in other counties coming up to these rates. In Gloucestershire, the product on several acres was from 46 to 49 bus. weight from 59 to 62½ lbs. In Worcestershire, in a field of 130 acres, the crop was nearly 47 bushels per acre.

In the Western States much of the wheat is under 60 lbs. It is considered the best weight at 60 lbs.,

and few crops go above that We think no wheat has ever been grown in this country at 64 lbs.

The white wheats yield the greatest proportion of flour, the flint wheats the greatest proportion of gluten, which is the most nutritious part of wheat. The white is preferred for making the superfine flour and white extra-fine bread, though the bread is less nutritious than that containing more gluten. The southern wheat generally contains the most gluten, though the proportion of this element is much affected by the kind of fertilizers used. No crude animal manure should be applied directly to the wheat, but to the previous crop. If the land is mellow, the wheat should be rolled.—*New England Farmer.*

WHEN SHOULD CROPS BE GATHERED.

Some science and some practical hints, which every farmer should understand and practice upon.

THE prevailing opinion is, that grass, and especially grain crops, should not be cut till ripe; or whatever may be the opinion, such is the general practice This is an error, and one of no little consequence; and we offer some considerations, which, if understood, will, we trust, set this matter in a clear light. Let us first look at one or two lessons plainly told us by chemistry.

Wood, starch, sugar and gum are almost exactly alike in their composition. The same elements that put together in one form produce sugar, if arranged differently would make wood, and if arranged in still other methods, they would produce starch or gum. To illustrate; suppose four men should each have 100,000 bricks, 20,000 feet of lumber, including beams, boards, shingles, &c., three hundred pounds of nails, and 100 lbs. of unmixed paints of two or three different colors. Now suppose these four men, having precisely the same amount of the different materials or elements, set about putting up four structures, each having a different object in view. One might construct an elegant cottage dwelling, the second a church, the third a barn and the fourth a prison; and by mixing and applying the paints differently, each of these structures would differ from the other so much in form and color, that one might be supposed to be built of stone, another of brick a third of iron, and a fourth of wood, and they would be as unlike in form, color, and outward appearance, as starch, gum, sugar and wood. Either of these buildings might be taken down, and by simply *re-arranging the materials*, be changed to the form, shape, and color of one of the other buildings, and be made like it in every particular. Just so can a pound of wood be changed to a pound of sugar. We have often taken a board weighing a pound, and by a chemical process re-arranged the elements, and change the same board to a pound of sugar. Just so a pound of starch, gum, or sugar, can be changed to a pound of wood. By artificial means this change is somewhat expensive, but in the natural laboratory of the cells and tubes of a plant, it is daily going on upon a large scale, although the elements are in themselves so small, that the change is not perceptible to the human vision.

We are not stating theories but absolute facts. While a stock of grain is unripe it contains but little woody fibre, and its pores or cells are filled with sugar, starch and gum. The presence of sugar is readily perceived by the sweet taste of soft kernels of corn and other grains, and it is also found abundantly in the sap of stalks. The starch and gum is not so readily perceived by the taste, though they are readily perceived by the taste, though they are easily shown to be present. Now as the grain and stalks ripen a large portion of starch, gum and sugar is changed into woody fibres. If the natural growth of the plant be arrested by cutting it, this change is stopped, and it dries up, with the starch, gum and sugar, and there is comparatively little hard woody matter.

But we all know that the three substances first named are digestible, nourishing articles of food, while the fourth—woody fibres—is comparatively indigestible, and on this account little nourishing.—Here, then, is a plain reason why all such grasses and grains, as are designed for food for animals, should be gathered before they are fully ripe, that is, while they contain a large amount of digestible matter. Wheat, for example, if cut eight or ten days before fully ripe, contains a large proportion of starch, with a thin skin, and will yield a large amount of flour; but when it is fully ripe it is covered with a thick, hard, woody skin, or bran, which has been formed out of a part of its starch, and it will then yield a much smaller proportion of flour. The same may be said of its sugar and gum. This reasoning applies equally to other grains as well as to straw, corn-stocks, grasses, &c.

Those portions of the grain which are to be used solely for reproducing the plant—and this is the *natural* design of all seeds—*may* be left to ripen naturally. The woody coating is designed as a protecting covering.

Having thus endeavored to state very briefly some of the *reasons* for *cutting grain early*—and it must be interesting to every one to understand these reasons—we will close this article with to or three rules which are not only sustained by theory but have been fully proved by careful practice and experiment.

1st. All grasses should be cut as soon as possible after flowering. Much more than is gained in weight after this is lost by the conversion of the nourishing substance into hard, woody matter.

2d. Corn, wheat, and all other grains designed for food, should be gathered eight or twelve days before fully ripe. A simple method of determining this, is to try the kernels with the thumb nail. Let the gathering commence immediately after the "milk" begins to harden, but while the kernel still yields to a gentle pressure of the nail.

An acre of wheat, that, if cut when fully ripe, would yield 800 lbs. of fine flour, will, if cut ten days earlier, yield from 850 to 1000 lbs. of flour of a better quality, while the straw will be much more valuable for feeding.

An acre of grass, which, when cut fully ripe, would yield 1000 lbs. nourishing digestible materials, and 2000 lbs. of woody matter, will, if cut 12 days earlier, yield from 1500 to 1800 lbs. of nourishing matter, and only 1200 to 1500 lbs. of woody materials. —*American Agriculturist.*

HOME MANUFACTURE OF POUDRETTE.

Inquiries like the following have often been made, and many have desired know how they could avail themselves of a valuable manure, and at the same time render the apartments alluded to entirely free from odor. Information on the subject of economy and cleanliness combined which could not be obtained in any other way, we have no doubt will be acceptable to many of our readers.

"Will you please inform me the best and most convenient mode of manufacturing night-soil into poudrette, so that it may be drawn on land and spread without odor or inconvenience—my inquiry refers only to home use, of this powerful manure. B. G."

The contents of privies, commonly known under the name of night-soils, furnish exceedingly powerful manure when properly manufactured, and under right management, the process will destroy all the effluvia arising from those deposits, and render the closet entirely inoffensive.

When a reservoir or small stream of water is at command, so that a current may be made to sweep through several times a day and carry off the contents into the manure yard, or into a covered bed of peat, or a compost heap, this forms perhaps the most perfect mode of removal. An essential requisite, however is freedom from the influence of frost, and the closet should therefore be connected with the dwelling where the reservoir of water may be kept from freezing, and from which there should be an underground channel of considerable size and slope. We have known all this to be perfectly accomplished by means of a lead cistern in the upper story, which was kept supplied with rain water at all times from the broad roof of the house, and which was sufficient beside for baths, washing, and all other domestic purposes.

When a current of water cannot be used, the next best contrivance is to form a tight box, of matched pine plank, and give it two or three coats of coal tar, so as to render it durable, and proof against moisture and warping. It is to be placed on two runners like that of a sled, made of plank or scantling, to the forward end of which a chain and iron hook are attached, so that it may readily be drawn off by a horse. This box must be of such a size as to fit a cavity made on purpose under the building.

The next thing is to provide a supply of some efficient deodorizing substance. Dry sawdust or thoroughly dried peat does tolerably well, with the occasional addition of ashes and powdered charcoal. Charcoal dust alone is much better, and if daily applied in small quantities will nearly destroy all smell; but it is absolutely essential to success that a full supply of this material be kept near at hand in a large box or hogshead in a shed or out house, where it shall be always dry and in a condition to apply every day, summer and winter. Animal charcoal is still more efficient than common charcoal, and may be made to form a portion of a material made as follows: Make a pile of peat, turf, old straw and brush, mix with tanner's shavings and broken bones; let the pile become dry enough to burn, and then cover it with sods and set it on fire. It should be suffered to burn with a slow, smothered combustion, so as to char without consuming the materials. When the process is completed, the whole heap, including the turf covering, should be well mixed together and broken fine, and then placed in a large box under shelter, for daily use. Any portion of clay introduced by means of the turf, and well dried, forms a powerful absorbent of fœtid matter. As often as may be convenient, a horse is hitched to the hook and chain, and the whole is drawn off into the barn-yard, when it is quickly discharged by turning the box upside down; and after covering the bottom and sides with the prepared material already described, it is replaced as before. The strong manure thus obtained, will, if well mixed possess but little odor and may be used directly, or may be mixed with common manure in the compost heap. Durable plank should be placed under the runners, to prevent their sinking into the earth, and enable the horse to start the box easily. It is said that those who are employed to obtain the materials for the wholesale manufacture of poudrette, throw in, before commencing operations, a few quarts of a strong solution of copperas, which immediately neutralizes effluvia, and adds to the value of the manure.

Since the above was written, we have received the following:

"The different modes of saving as well as making manure, very properly engage the attention of agriculturists to a great extent. There is one mode of saving manure, however, which is very much overlooked. The farmers generally, in building a "palace" for the accommodation of the household, either dig a pit to a great depth, or a shallow one with a movable building, to be removed as often as the pit becomes filled. In the former case, there is fitted up a complete nuisance (after a year's existence) and a trap to frighten mothers and nurses. The latter is a nuisance from the beginning, and a subject of complaint almost everywhere. The plan I have adopted is simple and cheap—leaving the "palace" as sweet as any chamber in the house, and productive, yearly of a tank, of manure worth twenty-five dollars—a species of poudrette, I venture to say more fertilizing than any that can be purchased.

I have sunk a tank or pit, ten feet square and four feet deep, and lined with plank—stone or brick walls would perhaps be better. Upon transverse beams is built the "palace" five feet square. From the kitchen and wash house, I have under-ground sewers emptying into this tank, through which all the slops of every description pass. The seat is fixed on hinges so that the whole top may be opened up, and at this opening is deposited all the dirt accruing about the house including the ashes from two fires. The dirt and ashes absorb all the slops and moisture, and prevent the slightest unpleasant smell. This tank may be filled once or twice a year, and each filling would be worth to the garden the sum before mentioned. It is astonishing that this is much neglected by persons even who know the value of manures, and can appreciate cleanliness and convenience. B. B."
—*Country Gentleman.*

Avarice often produces contrary effects.

[From the New England Farmer.]

A NEW WIND-MILL.

S. Brown, Esq.—Dear Sir:—I send you herewith a letter to me from an old friend, which if you think best you will please publish in the *Farmer*. I know nothing of the newly-invented wind-mill my friend describes more than you can learn from his communication. He is of quite a scientific turn of mind, and I think it quite probable the invention may prove valuable to the community. F. Holbrook.

Brattleboro', August 2, 1854.

Mr. Holbrook—Dear Sir:—Knowing the interest which you take in any new invention of merit, particularly, such as directly benefits the agricultural community, I am induced to write you respecting a wind-mill of an entirely new construction. Within the last few years I have noticed many inquiries in the scientific and agricultural papers of this country, respecting wind-mills, stating, that if some ingenious mechanic would invent machinery to be carried by wind, which could be regulated with but little difficulty, and of a permanent, durable construction, not likely to be destroyed by severe gales, he would not only be doing the public a great service, but would most assuredly acquire a fortune thereby. For centuries, the civilized world has been looking for something of this kind. In the retired village of Ellington, Conn., Daniel Haladay, a young mechanic, has, after one year's trial, succeeded in producing a wind-mill, or wind-engine which regulates itself. When terrific gales stike it, the broad wings swing back, presenting only their thin edges to the wind, and when the extra pressure has passed, the fans, of themselves, swing back, presenting their surface to the wind, or such a part of the surface as the pressure will admit of. The mill we have there in operation, has been running since early last spring, proving by a fair trial its utility and capability of regulating itself through severe storms. The wheel is ten feet in diameter, having five foot fans; they will be enlarged as more power is required.

This one draws water from a well 28 feet deep, and 100 feet distant, forcing it to supply a barn, blacksmith's shop, and fish-pond, all of which have been bountifully supplied by it. Repeated trials and their failure in producing a desirable wind-power, has nearly discouraged farmers from attempting its use. I recollect that when a boy, I was tending a four horse-power steam-engine in your village, and for a moment detached the regulator: the movement became immediatefy so rapid and violent, that, had I not quickly replaced it, the increased speed would have torn it from its foundation. Now, many times there is a pressure in the air, as great as that upon the steam-engine; yet people, to some extent, are trying to use this power with nothing to control it, and the results are violent, irregular motion, and frequent breaking of machinery. I now see but one objection which can possibly be raised to this power—that is, the wind does not blow constantly. To this I offer the following considerations:

1st. You have a good working power, for one-half the days, and nights also, during the year, and at times a mill will run night and day for two weeks in succession.

2d. This mighty agent, of almost unbounded power, costs nothing—the Creator makes it a free gift to all. Many millions of horse power, go sweeping through the heavens, over every man's farm and work-shop, which the skill of man can now control, using it to pump water for beautifying grounds with ponds and fountains, supplying houses, watering stock, irrigating land; and if applied to machinery, the extensive farmer will use it to thresh grain, saw wood, cut hay, &c. In using it to supply water, large reservoirs can be built to draw from, in case the mill should be still for a few days. It is very appropriate for irrigating land, making flowers, fruits and grains to grow, where the mullen and sorrel, now scarcely find nourishment, and where now the dismal croak of the frog is heard, the clear music of the scythe and whetstone to ring upon the morning air.

The inventor will soon commence the manufacture of these mills on a large scale, and notify the public by advertising the same in the *New England Farmer*. Very truly, your friend, I. B.

New Haven, July 19, 1854.

[Remarks.—There is scarcely anything which would prove of more substantial service to the farmer, than the means of collecting and distributing water at his pleasure. On many farms large quantities of pure water are collected by drainage, which run idly by, while all the water needed for a large family and a large stock of cattle, sheep and horses, has to be raised by human toil. If a cheap, substantial, and permanent power were devised, all his labor might be given over to the sport of the winds, and thousands of gardens and lawns and fields irrigated, so as to add immensely to the beauty of the landscape, and untold profits to the labor of the husband-man. We earnestly hope that the mill here spoken of, will meet the general wants of the people, and that our friend will let us know more particularly about it.—Ed. *N. E. Farmer*.]

Fire Kindlers.—We have seen an article made from the following recipe, tried and pronounced excellent for kindling wood-fires, but it is of little use where coal is used—at least, we have never been able to "make it work" without the usual amount of wood kindling:

Take a quart of tar and three pounds of rosin, melt them, bring to a cooling temperature, mix with as much saw-dust, with a little charcoal added, as can be worked in; spread out while hot upon a board; when cold, break up into lumps of the size of a large hickory nut, and you have, at a small expense, kindling material enough for a household for one year. They will easily ignite from a match, and burn with a strong blaze, long enough to start any wood that is fit to burn. Try it.

Thirty pure short-horned cattle, the property of the Clark County Importing Company, were sold at auction at Springfield, Ohio, lately. A bull, two years old, brought $4,000; one eighteen months old, $2,500; and another $1,900, besides others at prices ranging from $625 down to $300. Cows sold at $1,425, $1,300, $1,000, down to $205 each. So says an Ohio paper.

GUANO WITH PLASTER, LIME AND ASHES.

It has been a mooted question among farmers and writers upon special manures, whether guano mixed with plaster, ashes or lime, loses any of its virtues as a manure.

Our Correspondent "H" of last week, has placed this question at rest—by the most satisfactory experiments.

This article is of so much practical value that we must quote that portion relating to it.

"Guano kept in bags wastes on the same principle that the Druggist loses his ammonia or hartshorn, if the bottle is left open, and more rapidly if he pours it out into a dish.

"The smell of ammonia passing off is always present, the closest cask therefore keeps it best.

"Seeds put into guano or on it, where in quantities and covered, are "burned" like the manure-heaps when the heat of fermentation is too great.

"Guano mixed with sand would certainly not be acted on by the sand, and guano, (it is believed) when mixed with plaster, is not at all affected by it. Guano mixed with ashes is rapidly decomposed and with lime more rapidly than by ashes.

"I have made these experiments in a way that can be repeated by the farmer, and if you please I wish you to repeat them.

"I send you enclosed a sheet of *red Litimus* for the purpose.

"Take four teacups and place in one a table spoonful of guano, mix the same quantity of guano with an equal part of plaster in an other and with ashes and lime in two others. Cut the sheet into squares, wet them in clear water, and lay one tight over each cup, and observe the change, from red to blue.

"The rapidity of the change and the intensity of the blue tint, will illustrate the passing off of the *ammonia* in the gaseous form.

"The decomposition with ashes, and lime was exceeding rapid—the other two seemed to advance about equally. unless the Guano alone exhaled more ammonia than when mixed with plaster.

"If the plaster *acts* on the guano to separate ammonia the Sulphuric acid must take it and form Sulphate of ammonia, and set free the lime. Guano mixed with common salt, does not seem to loose ammonia, and if the two are decomposed, still the ammonia ought to be retained in combination with the Clorine—as Sal Ammoniac. The first point is to *retain the ammonia* and any compost of guano, that does not act to set free the ammonia, cannot be injurious. H."

We tried the experiments suggested by H. in the presence of a number of gentlemen, and with the same striking results—and will here express our thanks to him for suggesting the experiment and enabling us to see it, for here *seeing is believing.*

And from the opinion of "H." in which the utmost confidence can be placed and from the other experiment, we have no hesitation in saying to our friends, that they can mix guano with plaster, without any injury to the guano and thus render it more easy and pleasant to be sown broadcast, or to be applied in the hill or drill. But do not mix guano with ashes or lime, as either disengages its ammonia sets it free and thus wastes its most valuable property.—*Exchange.*

In the above simple and plain experiments the reader will see a confirmation of our statement made in the April number, page 127, to the effect that plaster will not liberate ammonia from guano. We use ashes on the same land, and crops to which guano is applied, but do not mix the two fertilizers together. Lime and ashes should be applied by themselves; while salt and guano, or gypsum and guano may be united before their application.

Cost of Manure.—The question simply should be, will a dollar's worth of manure produce more than 106 cents' worth of corn beyond the expense of producing it, and beyond the natural crop of the land? We say that an extra dollar properly invested in manures, will produce an excess in crop of five dollars' worth of corn in a single year, and in many cases a much larger ratio of increase, besides leaving the land worth nearly or all the cost of manure better for future crops. What would be said of the merchant who should loan so much of his capital on bond and mortgage, that he had not sufficient means to keep the necessary stock of goods to supply his customers? And why should the farmer loan his money to others at six per cent. per annum, when he could earn a profit, in addition to the interest, by using it himself? When a farmer's income is truly in excess of his farm, then he is consulting his best interest by investing his money where it may be used by others for his benefit; but until his own business is properly cared for, he is wrong to part with the means necessary to its success. So long as further additions of manure will increase the product beyond cost, the farmer should continue to increase the quantity used; and if he cannot do so by any other means, he should reduce the quantity of land tilled. —*Working Farmer.*

Mr. Goldthwait, Princial of the Westfield Academy, proposes to the farmers of Westfield a series of weekly evening meetings, for the purpose of discussion and a comparison of views upon topics of interest to the agriculturist. The suggestion is a good one, and might be adopted by the farmers in other towns with great advantage.

Nitrate of Soda.—Mr. Stephenson, of Edinburgh, applied one cwt. of nitrate of soda and two cwt. of common salt per acre to a wheat crop, and increased the yield nine bushels per acre.

Door Mats.—Nearly every kind of mat has been tried in the public schools at Columbus, and the rope mats (made of oakum) are found the most durable. So says the Ohio *Journal of Education.*

To keep out Red Ants.—Place in the closet, or wherever they usually appear, a small quantity of green sage.

Horticultural Department.

CONDUCTED BY JOSEPH FROST.

THE NEW YORK STATE FAIR.

The New York State Agricultural Society held their Exhibition for 1854, on the 3d, 4th, 5th and 6th of October, upon Hamilton Square, in the city of New York.

The management of the Society having made a mistake pecuniarily, in selecting Saratoga Springs for the display last season, concluded to adopt the most feasible way, in their estimation, to put the Society again in funds.

New York city in the extreme South-eastern part of the State, comprising three-fourths of a million inhabitants, from which ebbed and flowed the wealth of the country, and whose people, when interested in any thing, are always known to make their mark, was the favored location. If money is wanted for foreign missions, or other praiseworthy objects, or if enthusiasm should be needed, though required brimful that the people would run half mad, what place would furnish it as readily and freely as New York, under the proper direction? It was supposed the public would put aside in part, for three or four days, the thought of politics, theatres, operas, magnificent buildings and princely hotels, and receive a display of beautiful horses, superior breeds of cattle, hogs, sheep, &c., as well as fowls expanded to an immense size and to an unnatural shape, also a fine collection of fruits, such as seldom grace tables in any country.

There were sufficient inducements to attract crowds of visitors in most places, but not in the commercial metropolis; as the Society's meeting for 1854 has proved to be a total failure, and far more disastrous than that at Saratoga last year.

According to published statements, the number of persons who visited the grounds was 40,000, which is a great disparity in numbers from the exhibitions formerly in the Central, Eastern and Western parts of the State, where 100,000 attended.

The amount of receipts were about $8,000, out of which $8,000 in premiums are to be paid, besides the erection of suitable enclosures, tents, buildings, and other fixtures, which was no trifling expense.

In justice to the Society, we would say that the arrangement and order, as well as the fixtures, were a great improvement upon those of previous years.

The classification of the different articles were attended to by competent persons, which rendered the decision upon the different articles entered for competition by the judges comparatively easy. But there is still room for much more improvement, by extending it to every thing upon exhibition, which we hope may be adopted for the future.

The police regulations were very complete, and reflected much credit upon the department. An incident occurred which caused considerable stir among some, and caution on the part of others. The Chief of Police visiting the grounds on Thursday, soon spied two gentlemanly pickpockets in the act of practicing their nefarious profession. The gentry were quickly caught, and a large placard suspended by a string was hung about each of their necks, on which was printed in bold letters "Pickpockets," and they were compelled to promenade about the grounds from two to three hours, under a strong escot of police, followed by hundreds who were eager to obtain a sight of the scoundrels.

The articles upon exhibition were generally choice and well selected—better, we think, than they have usually been—but the quantity was very small.

Stalls assigned for cattle, pens for hogs, sheep, &c., were not much more than half occupied.

Although the New York Horticultural Society combined its autumnal exhibition with theirs, the contributions of fruits and flowers in Floral Hall were not in as great profusion as heretofore.

The causes of such deplorable results are very obvious, the principal one being the location, which was necessarily from four to five miles from the central part of the city. The distance being so great, every one was compelled to ride; and the communications being only with cars drawn by horses on the 3d Avenue Railroad—one passing every five minutes—a line of omnibusses going within sight of it, and a train on the Harlem Railroad leaving every half hour, were the only means provided to convey the 40,000 visitors. It is only surprising to us how as many visited it as did; but during the five or six hours in the middle of the day on Thursday and Friday, every available space in the conveyances was packed, as well as places on which to hang. Then there existed among the citizens the most perfect apathy concerning it. Probably not one fourth of them were aware that a State Agricultural Society was in existence.

This will probably be the last time that New York will be favored with this exhibition. It is thought now that the interests of the Society will be sufficiently looked after to always hold the future exhibitions in the midst of the agricultural districts, and among the farmers, who are the only ones directly interested or benefited by them; and it may be relied upon that just so far as they may deviate from this, just so much will it prove unsuccessful.

THE FRUIT TRADE.

The peach trade to the Canadas and eastern cities has assumed an importance of late years, second only to the apple trade. A city paper states that over twenty-six thousand baskets of peaches have been shipped at the port of Charlotte alone; and judging from observation, we should presume that an equal number had been forwarded east. This would make an aggregate of over 50,000 baskets.

The fruit trade in this vicinity is increasing every year in value and importance, and the prices for good fruit were perhaps never more remunerative. From data furnished by a fruit dealer, we estimate that about sixty thousand barrels of apples were shipped to the eastern market last season by canal and railroad; and from present appearances in our markets, the amount will be largely exceeded the present season. Dealers are paying from one dollar and twenty, five cents to one dollar and fifty cents per barrel for fair winter fruit—barrels included—which, at twenty-five cents each, makes the price per bushel from thir-

ty-seven and a half cents to fifty cents per bushel. One gentleman who has a farm in Greece has gathered seventy bushels of apples from three trees; being early fruit, he received nearly forty dollars as the avails of the products of those three trees. There is no fear of glutting the market. The use increases with the supply, and five-fold more fruit might be consumed by our families on the score of health and economy than is at present—we are speaking of good fruit only; for it will not pay to bring a poor article to market. It takes as much time, labor and expense to bring a tree growing poor fruit into bearing as it does its opposite; but there is a great difference in the ultimate profit—see to it then that you cultivate only the best.

PEACH ORCHARDS—RIPENING OF THE FRUIT.

The following, taken from the *Louisville Journal*, will be found useful to our Western and Southern subscribers who intend to plant peach orchards. It will be seen that the varieties named give a period of nearly three months, during which they may enjoy that delicious fruit:

"A select list of peaches for the latitude of Louisville, Ky., carefully compiled from notes on the weekly exhibitions of the Kentucky Horticultural Society during the years 1850, 1851, and 1853, showing the leading standard fruits ripe in each week of the season, beginning with the White Nutmeg peach; showing also the principal fruits cultivated near Louisville not in the catalogues, and their time of ripening.—[The best varieties in each week are in Roman letters; inferior ones ripening with them in *italics*.]

Date as in year 1850.

"July 13—1st week—White Nutmeg.

"July 20—2d week—Yellow Nutmeg, as yet no good fruits.

"July 27—3d week—Early York, Early Anne.

"Aug. 3—4th week—Early Crawford, Early Tillotson, *President, Walter's Early, Grosse Mignonne.*

"Aug. 10—5th week—Pope's Cling, Vanzant's Superb, Yellow Alberge, *Cole's Red, Haines' Early Red, Washington Red, Davis' Early.*

"Aug. 17—6th week—Hill's, Rodman's Cling, Malta, Hill's Jersey, *Royal George, (or Teton de Venus* of some), *Davis' Cling, Jacques' Rare Ripe, Late Newington, Spanish Cling, Williamson's Cling.*

"Aug. 24—7th week—Leopold, Catharine, Crawford's Late Orange, Free Red, Pine Apple (or Grosse Mignonne of some), Lemon Cling, *Grosse Admirable Jaune, Large Melacoton, Green Catharine, Lemon Free, Old Mixon Cling, Breckinridge Cling,* and many others (glut of peach season).

"Aug. 31—8th week—Red Rare Ripe (not large, but one of the best fruits for cream or the dessert), Red Cheek Melacoton, Pavie Pomponne, *Young's Seedling, Hikes' Seedling.*

"Sept. 3—9th week—At this period there is a defect in the present list of succession and peaches are scarce for some two weeks.

"Sept. 10—10th week—Grand Admirable, Columbia, White Head's, Red Heath, and Smock's Late Free.

"Sept. 17—11th week—The weather is now cooler and the same varieties last several weeks, ripening slowly.

"Spt. 24—12th week—Columbia, Lagrange, Large Heath, Freestone Heath.

"Oct. 1—13th week—Ford's Late Yellow, White's Favorite. These are the latest well-flavored peaches of the season.

"N. B. The author of this list is aware that Trothe's, Early Druid Hill, 'Stump of the World,' and a few other new varieties, have not been fruited here, and are not therefore classified; with this exception, the list is believed to be reliable."

PEARS ON QUINCE STOCKS.

The following varieties of pears were unanimously recommended by the American Pomological Society recently held at Boston, as succeeding well upon quince in the different parts of the country. This was deemed necessary from the fact that many persons who are wholly ignorant upon the subject of dwarf trees, have contributed articles which have been published throughout the country, and are likely to produce the most mischievous results. All of these varieties do finely on quince, and may be relied upon to plant in the different localities throughout the United States. Other varieties will be added as soon as they have been sufficiently tested in the different localities.

Rostiezer, Beurre d'Anjou, Beurre Diel, Duchess d'Angouleme, White Doyenne, Louise Bonne de Jersey, ——— Figue d' Alencon, Urbaniste, Easter Beurre, Glout Morceau, ——— Pound, Castillac, Vicar of Winkfield, Napoleon Beurre d'Amalia, Beurre d'Aremberg. Soldat Laboreur, Beurre Langeleir, Long Green of Cox, Noveau Poiteau and St. Michael Archange.

THE LILIUM THOMPSONIANUM.

[*Dr. Thompson's Lily.*]

We find a colored drawing and a description of this Lily in the *Flore des Serres.* It was discovered more than thirty years ago, by the celebrated Dr. Wallich, or by collectors in his service, in the mountains of Gossain-Than, and Kamaon, and re-discovered a long time afterwards by Dr. Royle, at Mussoree. It bloomed for the first time in Europe in the greenhouses of Messrs. Loddiges, in London, in 1844, and the specimen from which this drawing was made, in the Kew Gardens, in April, 1853. It was produced from seeds collected at Almora, 8000 feet above the sea level, by Messrs. Thompson & Setrachey. Dr. Royle placed it among the Fritillaria, but Planchon asserts that it is neither more nor less than a Lily. It appears to have been found under two forms, one of which has rose-colored and the other violet-colored flowers; but Dr. Wallich's notes on the two forms in a living state leave no doubt as to their specific identity. The culture is described as in a cold frame, or in pots in a cold green-house or orangery during winter. There is a strong probability of its resisting the climate of a great part of this country in the open air. Its distinct color and graceful habit claim attention.—*Horticulturist.*

LILIUM THOMPSONIANUM.

TIME FOR BUYING FRUIT TREES.

Those who live at a distance from lines of communication, or who from any cause whatever might anticipate delay in getting their fruit trees from a nursery, had better order their trees in the fall, and preserve them through the winter in sand, or by what is called "heeling-in," which is simply to dig a trench in a dry soil, and laying in the trees by the roots, and covering up carefully with the earth taken from the trench. There are many advantages in getting your trees in the fall. *First*, you have a better chance of selecting good thrifty trees before the stock shall have been culled; *second*, in the fall you have more time to do things well, and make your preparations without the haste and hurry attendant upon spring work. The nurseryman who fills your order can do it much more to your mind than if the business is delayed till spring, and done amid the hurry and bustle inseparable upon all the work done in that season. Dig the holes wherein you design to plant your trees this fall, dig them broad and deep, and let the frosts of winter act upon the soil thrown out and break it up. Those who have tried the plan, say that if the holes are dug in the fall for trees designed to be planted in the ensuing spring, the trees will make a much greater growth than if not dug till spring. It seems plausible that it should be so. The action of air and atmosphere upon the soil must change its color, appearance and texture, and fit it for the nourishment of the roots, much more effectually if exposed for a length of time, than if not; and besides, there is another advantage—if you find water remaining in the holes dug, you may be sure it is time and labor unprofitably bestowed to plant trees there until after the soil has been thoroughly drained.

THE ORANGE WATERMELON.

Mr. Editor:—In passing through your city a few days since, on my way to the Niagara County Fair held at Lockport, I left with a friend a specimen of the above justly-celebrated melon for you, which I hope ere this you have received and carefully dissected.

I now proceed to give your readers a description of said melon. The "Orange Melon" is said to be a native of China, and lately introduced by Mr. Peabody, of Georgia, where it is regarded as the finest of all melons. From him I obtained the seed last spring (about a dozen), and planted them after the first of June. They prove to be hardy, perfectly adapted to the soil and climate of Western New York, and very prolific. One plant produced six fine specimens, the smallest of which weighed nine pounds. Soil a light sandy loam, manured in the hill, or rather under the hill, and cultivated with no extra care.

The rind, which is a mottled light-green color, separates from the pulp like that of an orange, and like an orange the pulp may be divided into seams, so as not to expose the seeds. Thus prepared, being divested of all lumber, nothing can excel it for dessert in a warm day. The flesh is a light-red or pink color, very sweet, and remarkably well filled to the center. Seeds small and white.

The "Ice Cream," or "White Sugar Melon" of Alabama, is another new and superior melon. Rind white, which separates from the pulp similar to the Orange Melon, though not so perfectly. The rind of this melon being thick, hard, and of fine texture, is used as a substitute for citron, and by many considered preferable. The flesh has a yellowish-white, frosty appearance, and (if cold when eaten) is very much like ice cream. Form, globular and large; seeds, white. It is hardy, and perfectly adapted to our soil and climate. Yours, truly, I. W. Briggs.

West Macedon, Wayne Co., N. Y.

HOW TO DESTROY YELLOW DOCK.

I sent to an agricultural warehouse in Boston, and purchased a pair of stiff heavy plate subsoil spades, 16 inches in length; I ground down the lower edge sharp, and after the haying season was over, put two men at work in the fields, cutting them off from six to ten inches below the surface and then pulling up the part of the root thus separated with the fingers, and after letting them lay upon the ground until wilted, gathered them up and put them into a pile on the side of the highway. I employed these men for the best part of three weeks in this operation, and gathered a large quantity of these roots which have rotted down on the roadside, and they have never appeared above the surface where they were cut in the ground. Some small ones escaped the eye of the workers, and seed was in the hay of that year, so that I must repeat the operation this year, but there is not one now where there were five before I cut them three years ago.

I believe if they are cut off six inches below the surface, pulled up and removed from the field, it will stop them; they will not sprout or vegetate from the part of the root left in the soil. The part left is too far below warmth, light and air to start it into life anew.—*Cor. Country Gentleman.*

The Butterfly Plant.—The *National Intelligencer* says that a specimen of the singular and beautiful "butterfly plant" is now in bloom at the National green-house in Washington. The blossoms are very large and yellow, with reddish-brown spots, and are moved to and fro with every breath of air, so as to resemble very much the gaudy insect from which it derives its name. The plant was brought from the Island of St. Thomas in the U. S. frigate Raritan.

To Cultivate the common Garden Rhubarb.—It is not enough to give it depth of good soil, but it must be watered in drouth; and in winter must be well covered with straw or dung. If this is attended to, your rhubarb will be solid when taken out of the ground; and your kitchen, if a warm one, will soon fit it for use.

To preserve Green Currants.—Currants may be kept fresh for a year or more, if they are gathered when green, separated from the stems, put into dry, clean junk bottles, and corked very carefully, so as to exclude the air. They should be kept in a cool place in the cellar.

Ladies' Department.

VALUABLE RECIPES.

To Destroy Bugs.—Mix half a pint of spirits of turpentine and half a pint of best rectified spirits of wine, in a strong bottle, and add in small pieces about half an ounce of camphor, which will dissolve in a few minutes. Shake the mixture well together; and, with a sponge or brush dipped in it, well wet the bed and furniture where the vermin breed. This will infallibly destroy both them and their nits, though they swarm. The dust, however, should be well brushed from the bedstead and furniture, to prevent, from such carelessness, any stain. If that precaution is attended to, there will be no danger of soiling the richest silk or damask. On touching a live bug with only the tip of a pin put into the mixture, the insect will be instantly deprived of existence, and should any bugs happen to appear after using the mixture, it will only be from not wetting the linen, &c., of the bed, the foldings and linings of the curtains near the rings or the joints, or holes in and about the bed or head-board, in which places the vermin nestle and breed; so that those parts being well wetted with more of the mixture, which dries as fast as it is used, and pouring it into the joints and holes, where the sponge and brush cannot reach, it will never fail totally to destroy them. The smell of this mixture, though powerful, is extremely wholesome, and to many persons very agreeable. It exhales, however, in two or three days. Only one caution is necessary; but that is important. The mixture must be well shaken when used; *but never applied by candle light*, lest the spirits, being attracted by the flare of the candle, might cause a conflagration.

Stains of Wine, Fruit, &c., after they have been long in the Linen.—Rub the part on each side with yellow soap; then lay on a mixture of starch in cold water very thick; rub it well in, and expose the linen to the sun and air till the stain comes out. If not removed in three or four days, rub that off and renew the process. When dry it may be sprinkled with a little water.

Recent Stains of Fruit may be removed by holding the linen tightly stretched over a tub and pouring hot water over the part. This must be done before any soap has been applied it.

As soon as a stain is made on table-linen, &c., rub on it common table salt before it has time to dry; the salt will keep it damp till the cloth is washed, when the stain will disappear; or wash the stain lightly when the cloth is removed.

Sir A. Cooper's Chilblain Liniment.—One ounce of camphorated spirit of wine, half an ounce of liquid subacetate of lead; mix, and apply in the usual way three or four times a day. Some persons use vinegar as a preventive; its efficacy might be increased, by the addition to the vinegar of one-fourth of its quantity of camphorated spirit.

A simple cure for Dysentery—which has never failed.—Take some butter off the churn, immediately after being churned, just as it is, without being salted or washed; clarify it over the fire like honey. Skim off all the milky particles when melted over a clear fire. Let the patient (if an adult) take two table-spoonfuls of the clarified remainder, twice or thrice within the day. This has never failed to effect a cure, and in many cases it has been almost instantaneous.

Apple Fritters.—Pear and core some fine large pippins, and cut them into round slices. Soak them in wine, sugar, and nutmeg, for two or three hours. Make a batter of four eggs; a table-spoonful of rose-water; a table-spoonful of wine; a table-spoonful of milk; thicken with enough flour, stirred in by degrees, to make a batter; mix it two or three hours before it is wanted, that it may be light. Heat some butter, and fry them brown; sift pounded sugar, and grate nutmeg over them.

A good way of Cooking Onions.—It is a good plan to boil onions in milk and water; it diminishes the strong taste of that vegetable. It is an excellent way of serving up onions, to chop them after they are boiled, and put them in a stewpan, with a little milk, butter, salt, and pepper, and let them stew about fifteen minutes. This gives them a fine flavor, and they can be served up very hot.

To dry Pumpkin.—Cut it round horizontally in tolerably thin slices, peel them and hang them on a line in a warm room. When perfectly dry, put them away for use. When you wish to use it, put it to soak over night; next day pour off the water, put on fresh water, stew and use it as usual, &c.

Another and, as some think, a much better way, is to boil and sift the pumpkin, then spread it out thin in tin plates, and dry hard in a warm oven. It will keep good all the year round, and a little piece boiled up in milk will make a batch of pies.

Substitue for Cream, in Tea or Coffee.—Beat the white of an egg to a froth, put to it a very small lump of butter, and mix well. Then turn the coffee to it gradually, so that it may not curdle. If perfectly done, it will be an excellent substitute for cream. For tea, omit the butter, using only the egg.

This might be of great use at sea, as eggs can be preserved fresh in various ways.

Advice to Mothers.—Do all in your power to teach your children self government. If a child is passionate, teach him by gentle means to curb his temper. If he is greedy, cultivate liberality in him. If he is sulky, charm him out of it by encouraging frank good humor. If he is indolent, accustom him to exertion, and train him so as to perform even onerous duties with alacrity. If pride comes in to make disobedience reluctant, subdue him, either by counsel or discipline. In short, give your children the habit of overcoming their beseting sins.

Young Ladies, now-a-days, when they are preparing for a walk, ought not to keep their lovers waiting as long as they do, for now they have only to put their bonnets half on.

Editor's Table.

AGENCY IN NEW YORK.—C. M. SAXTON, Agricultural Book Publisher, No. 152 Fulton street, New York, is agent for the GENESEE FARMER, and subscribers in that city who apply to him can have their papers delivered regularly at their houses.

ANOTHER number completes the present volume. To those who have read the GENESEE FARMER, it is unnecessary to state that no pains nor exertions have been spared to render the paper interesting and valuable. To our friends and agents we tender our grateful acknowledgments for past favors, and solicit a continuance of the same. In view of the material advance in the prices of paper, &c., may we not claim some extra exertion in our behalf? In the amount and quality of its reading matter, and variety of illustrations in proportion to its price, no paper in the country exceeds the GENESEE FARMER. If each one of our subscribers will present its claims to his friends and neighbors our circulation will be doubled, and the paper much improved the coming year. For terms, &c., see prospectus on last page.

MONROE COUNTY FAIR.—The Annual Fair of the Monroe County Agricultural Society, was held in this city on the 22d and 23d of September last. The attendance of contributors and speculators was creditable to all concerned; and the show of fruits and vegetables, taking into account the dryness of the season, we are assured on good authority, has not been excelled for the last ten years. The Society is much indebted to the indefatigable exertions of its officers for the completeness of the arrangements made, and for the success which attended their exertions. Our limits will not allow us to particularize but a few of the articles exhibited; but special commendation is due to those who contributed by the sacrifice of time and the display of their productions to the interest of the occasion. We notice a few of the premiums awarded, as follows:

Best barrel of wheat, G. REYNOLDS, Ogden.

Second best do., N. & E. S. HAYWARD, Brighton.

Best barrel of corn, T. CHAMBERLAIN, Penfield.

Best barrel of oats, C. K. ADAMS, Ogden.

Best barrel of barley, N. & E. S. HAYWARD, Brighton.

Best mower and reaper combined, E. D. HALLOCK, Rochester.

Best reaper (Seymour & Morgan's), W. FISHER, Brockport.

Best grain drill, E. D. HALLOCK, Rochester.

Best clover seed harvester, F. S. STEADMAN, Holley.

The ladies were not wanting in the display of their handiwork, in the shape of nice loaves of white and brown bread, as well as ornamental needlework.

The apples, pears, peaches, &c., looked very tempting to the eye, and we doubt not would be very agreeable to the taste.

Some samples of beautiful honey were exhibited by Mr. SWIFT, of Clarkson.

The display of implements was not so large as on some previous occasions; but those we noticed exhibited a marked improvement over the exhibitions of former years. Nearly all the varieties of farming utensils were exhibited; and he must be difficult to please who could not suit himself from the list presented for inspection.

The officers for the present year are:

President—F. P. ROOT, Esq., Sweden.

1st *Vice President*—STEPHEN S. SHELDON, Sweden.

2d " " L. B. MITCHELL, Pittsford.

3d " " DANIEL LEE, Rochester.

Secretary—JOSEPH HARRIS, Rochester.

Treasurer—E. S. HAYWARD, Brighton.

DAIRIES IN NEW CASTLE COUNTY, DELAWARE.—Mr. REYBOLD, a son of the distinguished farmer of that name, keeps two dairies of 50 cows each for the production of butter, which is sold on contract at 25 cents a pound. The net revenue from these 100 cows is $3,600 per annum, being an income of $36 per cow. Some proprietors of dairies rent their cows in that county at $22.50 a head; and others as high as $25 each, the owner furnishing food for them. Dairying in the vicinity of Washington, where this paragraph is written, pays remarkably well; any northern man familiar with the business can make money at it, provided he has a little capital to commence with. Milk is never less than six cents a quart, and generally sells at from eight to ten; butter sells at from 20 to 50 cents a pound; and cream at a dollar a gallon. The only difficulty lies in the expense of raising food for cows. The land being poor, and nearly devoid of lime, grasses do not flourish naturally, and few appear to know what the soil needs to yield an abundance of cheap milk.

THE KNUCKLE WASHING MACHINE.—We were much interested in noticing the operation of the "Knuckle Washing Machine," so called, during the late County Fair. The rubbing of clothes was effected by plunging them, attached to a frame, among a hundred and fifty wooden balls floating loosely in the machine. From assurances given us by those of our acquaintance who have used the machine in question, we think that any one who would lighten the labors of his better-half on washing-day, can not do better than procure one.

NOTICE TO CORRESPONDENTS.—The principle editor of this paper has been absent some six weeks on his farm in the District of Columbia, which will explain the omission to answer many letters addressed to him on various subjects. We have several communications in hand which will appear in our next issue; and we are always thankful for instructive articles sent to this office for publication.

MR. J. W. BRIGGS will accept our thanks for the fine "Orange Watermelon" and seedling peaches left with us for trial. Both were delicious in flavor; and one of the peaches was superior to any that we have tasted the present season.

MR. W. MORLEY, No. 35 Reynolds street, has left on our table a beautiful pear, of the variety of *Vicar of Winkfield* The tree has borne this year for the first time. The quality we will test when ripened in December.

Hogs.—We find in an exchange the following: "In cold weather, hogs should have a dry, warm shelter, and a good, soft, warm bed. Corbett says, give your hog a bed in which you could pass the night comfortably yourself. Give pure water, and generally warm food, and occasionally green food, such as raw roots, cabbage leaves, raw apples, &c. At all seasons when hogs are confined, give, in addition to the above, pure earth, charcoal, and occasionally dry rotten wood, for an absorbent. Give a little salt, and now and then a small dose of sulphur and antimony, and a little tar, and let them have access to alkalies, such as ashes and lime. Also, be sure to keep the issues open. Hogs have no insensible perspiration of the whole body, like the horse, ox, and many other animals; but they have issues on the inside of their fore-legs, just below the knee, which are porous, like the top of a pepper-box. Sometimes these become closed, and the animals fail. In such cases, take a cob, or other rough substance, and, with soap suds, rub open and wash the issues."

Pretty Good Provision Against Famine.—We are fully persuaded, says the *National Intelligencer*, that there is much more apprehension expressed about a deficiency in the grain crops of the season than is well founded. There has been more than an average crop of wheat, rye and oats throughout the country, and at least half an average crop of Indian corn. Let us see what all this will amount to: A full crop of wheat is 120,000,000 bushels; of rye, 15,000,000; of oats, 150,000,000; of Irish potatoes, 65,000,000; of half a crop of corn, 300,000,000. To which may be added—sweet potatoes, 40,000,000; buckwheat, 10,000,000; rice, 5,000,000; barley, 5,000,000; peas and beans, 10,000,000; besides an unusually heavy crop of hay. Here is about one thousand millions of bushels of what may be called bread—a pretty good provision, one would think, for twenty six millions of people.

Potato-digger.—Among the implements of farm labor exhibited at the Manchester, N. H. Fair, says the *Granite Farmer*, was a wagon with machinery attached for gathering potatoes, the recent invention of a New Hampshire farmer. The wagon is placed at one end of the potato field, with oxen or horses attached; and as it passes down the rows, digs the potatoes, separates them from the dirt, and loads them in the wagon.

Exports of Butter and Cheese.—The amount of butter produced in the United States in 1850 was 313,266,962 lbs., and of cheese 105,535,219 lbs. The average value of the exports of these two articles from the United States during the ten years (from 1849 to 1850) has been $1,000,000; during the last five years of the period, it has been $1,400,000.

Cows' Sore Teats.—First wash with castile soap and warm water, then apply lime water and linseed oil, mixed in equal parts.

The production of rice has increased from 80,841,422 lbs. in 1840 to 215,312,710 lbs. in 1850.

Wool-growing.—We have repeatedly asserted, says the *California Farmer*, that California will become one of the wool-growing States. Everything favors it—climate, pasturage, season, rapid increase, and little care or cost, all give the assurance of good success. Already the efforts have been particularly successful. The San Joaquin valley has already 150,000 sheep, and the number will soon be doubled by those on the way. Heavy lots of wool have been received in this city for shipment to the States; more than 200,000 lbs. have gone, and more will soon follow. There is no doubt but that in a little time California will take a prominent part in wool-growing, adding largely to the wealth of the State.

Straw on Wheat Fields.—The *Wheeling* (Va.) *Times and Gazette* says that the wheat-growers within ten miles of the city, in Virginia and Ohio, who practice uniformly selling their straw to the paper and binder's board mills and thus have the straw of their wheat crops regularly removed from their grounds, are seldom troubled with weevil. On the contrary, those whose farms are too far out, and who suffer the straw to rot on their lands, have their crops very much damaged by the ravages of the weevil. It is recommended, therefore, to burn the straw in all cases when it cannot be removed.

Decline of Prices in California.—We notice in the *California Farmer* a statement that much distress is now felt by the farmers of that State by reason of the great fall of prices of agricultural produce. Many large farmers are now in want of means to harvest their crops. In May last, the editor of the *California Farmer* saw hundreds of tons of potatoes lying in heaps on the ground in San Jose Valley going to decay—the prices then offered not even paying the expenses of conveyance to market, putting aside the cost of cultivation.

Halliday's Wind Engine.—We notice in a recent number of the *Scientific American* an engraving and description of Halliday's Wind Engine, which was in operation at the State Fair. A paragraph in the *New York Tribune* states that during a gust of wind which tore down awnings, &c., the machine in question actually came to a stand still, and as soon as the force of the wind was moderated again commenced its revolutions.

Inquiries and Answers.

Having been a subscriber for the Genesee Farmer for some time past, I have perused its columns with much interest, and have found almost every thing relating to farming and building, and have derived great benefit from the paper. I would like to know if any of your correspondents can give me some information in regard to making a cellar that will keep out rats. I have been troubled with them a great deal. If there is any way to prevent them from digging under the wall, I should like to know it. I intend to move my house next spring, and one reason for moving it is to get rid of these pests, if possible. P. S.—*Perry.*

Will some of our correspondents who have knowledge of such matters please communicate their experience?

HORTICULTURAL.

In the September number of the GENESEE FARMER, page 225, I noticed an article entitled "Grafting Pears on Mountain Ash." Now I wish to know what this Mountain Ash is, where it grows, what kind of timber it is, and where the stock is to be had. Please let me know in your next number. DAVID LANDIS.—*Hickesville.*

The Mountain Ash is a handsome tree of slow growth, with a tough, cross-grained, but not very hard, wood. It is a native of our country. The berries are of a bright scarlet, very juicy, sour and bitter. Some species of birds are very fond of them. We would not advise you to experiment upon the grafting of pears upon them as stocks. If you wish dwarf trees, bud upon the Angers Quince which can be obtained at very low rates from nearly every nursery. For standards, you will of course use vigorous and healthy seedling stocks.

In the spring of 1853 I planted a young orchard of some fifty trees—apple fruit—ten or twelve of which died the following summer, which I replaced last spring. This summer they have all been destroyed, save seven or eight, by an intruder in the shape of a worm, which in color is white. It is formed in sort of sections with a large flat head, and is from three-quarters to an inch long. Its place of warfare is between the bark and the wood, on the body or stem of the tree, traveling frequently entirely round the stem, causing the tree to wither and die. They appear to enter the bark in the shape of an insect or fly, as I find some yet in the bark, very small. The trees have been regularly whitewashed. They have a south sun exposure, and have undergone an extreme drouth during the summer. Can you or any of your correspondents suggest a remedy for the evil? F. R.—*Mt. Sterling, Ind.*

Will some of our readers give their experience in cases like the foregoing?

Literary Notices.

FIRST LESSONS IN CHEMISTRY AND GEOLOGY, AS APPLIED TO AGRICULTURE: designed for the use of Schools. By J. EMERSON KENT, A. M., M. D. Boston: DAYTON & WENTWORTH.

From a brief inspection of the above work, we would cordially commend its general introduction into our schools.

THE CONSTITUTION OF THE UNITED STATES, with all the Acts of Congress relating to Slavery, including the Kansas and Nebraska Bills. Rochester: D. M. DEWEY.

Those interested in the investigation of a subject which is creating so much sectional feeling at the present time, will find the above valuable as a means of reference.

MR. WM. MINIFIE, of Baltimore, has sent us a copy of his *Lectures on Drawing and Design*, wherein the general usefulness and application of those subjects to all the active business of life are very clearly stated. Illustrations of the utility of an acquaintance with the elements are given from almost every avocation of life; and we fully concur in all the positions that he advances.

WE have rarely perused any work with more interest than the *Annual Report of the Trustees of the School for Idiotic Children of the State of Massachusetts.* It would be well for our country if documents like the foregoing were scattered broadcast over the land. No essay or learned discourse upon the obligation of all to live temperate, chaste and active lives, and the advantages of so doing, are more profitable and impressive than the plain, unadorned detail of the causes which in a great majority of instances conduce to idiocy; and teachers who have youth entrusted to their charge, and who are sometimes almost required to find brains as well as to teach, may derive many useful hints as to the methods to be adopted to arouse the dormant faculties of dull pupils, and excite them to active exercise. We might enlarge upon this topic, but our limits forbid. Patience and perseverance are the only passports to success.

"ALCOHOL AND THE CONSTITUTION OF MAN," is the title of a pamphlet prepared by E. L. YOUMANS, and published by Messrs. FOWLERS & WELLS. Mr. YOUMANS is favorably known as the author of a popular work *(The Class-book of Chemistry);* and he has illustrated the subject by a beautifully-colored chemical chart.

STRAWBERRY-CULTURE.—Our readers will have noticed in the October number of this journal an advertisement of a *Complete Manual for the Cultivation of the Strawberry*, &c., by R. G. PARDEE. A simple recapitulation of some of the topics treated is the best recommendation we can give, which, from examination, we think fully deserves its title as a complete manual. Every one who has a garden, or a plot of ground but a few feet square, ought to possess a copy of the work in question.

THE AMERICAN JOURNAL OF MEDICAL SCIENCES (HAYS').—This journal for the current quarter has lain for some time upon our table. As usual, its contents are of a high order of excellence. The original department occupies 136 of the 290 pages. Two careful reviews and sixteen biographical notices are given. The rest of the number is occupied with the Quarterly Summary of improvements and discoveries, at home and abroad, in the Medical Sciences. Published by BLANCHARD & LEA, Philadelphia, at five dollars.

ADVERTISEMENTS,

To secure insertion in the FARMER, must be received as early as the 10th of the previous month, and be of such a character as to be of interest to farmers. TERMS—Two Dollars for every hundred words, each insertion, PAID IN ADVANCE.

APPLE SEEDLINGS.

100,000 TWO YEARS' GROWTH, grown and delivered in Western New York, offered on reasonable terms. Inquire of E. B. & J. F. DRAKE,
November 1, 1854.—2t Janesville, Wis.

100,000 SEEDLING APPLE TREES,

LARGE enough to graft, one year's growth. Also, 15,000 Seedling Cherry Trees. Address H. PAIGN,
November 1, 1854.—1t* Lockport, N. Y.

WM. R. PRINCE & CO., FLUSHING, N. Y.,

WILL send to applicants who enclose stamps, their New Catalogues, 30th edition. No. 1, Trees and Shrubs. No. 2, Roses, Bulbous and Herbaceous Plants, Dahlias, &c. No. 3, Garden and other Seeds. November 1, 1854.—1t

BULKLEY'S STEAM DRY KILNS.

GREEN LUMBER can be kiln-dried in 24 hours by Bulkley's patent plan by *superheated steam.* Cost of Kiln, $20 for small size. Also, 50 to 500 barrels of flour or meal, or 100 to 5,000 bushels of grain per day. Cost of kiln from $150 up, varying with size. Warranted superior to any other mode. Single Rights or Territories sold low, and circulars sent gratis on application to the patentee, at Kalamazoo, Michigan. H. G. BULKLEY.
November 1, 1854.—1t*

McCORMICK'S REAPING AND MOWING MACHINE.

I AM manufacturing 1500 Reaping and Mowing Machines for 1854, and farmers who want Machines are requested to send in their orders early. Last year I had not a supply, although I had 1500 in the market.

I offer my large experience (both in this country and in Europe) for the last fifteen years and more in this business, as the safest guarantee the farmer can have in the purchase of a Machine of this kind.

Deeming it useless to insert long advertisements in the newspapers, I shall be pleased to furnish applicants with my printed Circular.

Some important improvements have been made, while the Machine will be found as simple and efficient as a Machine of the kind can be. The important points that will present themselves in these Machines, will be Perfect Simplicity, Ease of Repairing, Durability, and Adaptation to the Wants of the Farmer as a Reaper and Mower. I shall continue the use of the Wrought-iron Beam, which will be found very important in mowing, because of the friction upon the ground, and liability to tear and wear a Wooden Beam, or any sheet-iron lining that may be used upon it. Another very important advantage which I claim for my Combined Machine is that it can be readily changed so as to cut any desired height of stubble as a Reaper or Mower by simply removing three bolts. This principle will be found wanting in other machines, though valuable upon rough ground, or for mowing barley or lodged oats, timothy seed, clover seed, &c., or where the ground may not be firm, and there be liability in the wheels to sink and the cutter to be brought in contact with the ground, sand, gravel, &c. With my Combined Machine the farmer has the advantage of a Reel in mowing, which admits of a slow walk to the horses, and is especially valuable when the wind interferes with the successful operation of the Machine. I have no fear of the result upon trial of the Machine with others; it has no superior as a Reaper or as a Mower.

The public are now especially cautioned to beware of SEYMOUR & MORGAN'S "NEW YORK REAPER." These men have been selling my Machines, *though under an injunction the second time since the re-issue of my Patent in April last*, in addition to a verdict of $20,000 for past infringements.

☞ Sundry other parties will soon be held to strict account for their infringements under this Patent, which makes them just as liable to be enjoined as Seymour & Morgan.

The Machine will be warranted equal to any other, both as a Reaper and as a Mower; and it will be forwarded to any part of New York or Canada, if ordered of THOS. J. PATERSON, at Rochester, N. Y., who wants Agents to sell it in some of the unoccupied wheat districts. C. H. McCORMICK.

May 1, 1854.—tf

GENESEE VALLEY NURSERIES.

A. FROST & CO. ROCHESTER, N. Y.,

OFFER to the public the coming spring one of the largest and finest stocks of Fruit and Ornamental Trees, Shrubs, Roses &c., in the country. It in part consists of standard Apple, Pear, Cherry, Plum, Peach, Apricot, Nectarine and Quince Trees. Also, Dwarf and Pyramid Pears and Apples.

SMALL FRUITS.—Native and Foreign Grapes, old and new sorts of Currants, finest Lancashire Gooseberries, Strawberries, Raspberries, &c. &c.

The ORNAMENTAL DEPARTMENT comprises a great variety of Deciduous and Evergreen Trees, Shrubs, Vines and Creepers, which includes upward of of 300 varieties of the Rose.

BEDDING PLANTS.—150 varieties of Dahlias, a large collection of Verbenas, Petunias, Helictropes, &c. &c.

Priced Catalogues of the above will be mailed to all applicants enclosing a postage stamp for each Catalogue wanted, viz:

No. 1.—Descriptive Catalogue of Fruits, Ornamental Trees, Shrubs, &c.

No. 2.—Descriptive Catalogue of Green House and Bedding Plants of every description, including every thing new which may be introduced up to its season, will be published in March each year.

No. 3.—Wholesale Catalogue, published in September.

February 1, 1854.—tf

CUTTER RIGHTS FOR SALE

WE will test our Hay, Stalk and Straw Cutter, patented November 8th, 1853, for speed, ease and durability, against any other in the United States. J. JONES & A. LYLE.

☞ For further information, address JONES & LYLE, Rochester, N. Y. February 1, 1854.—tf

MERINO SHEEP.

THE subscriber will sell a few Spanish Merino Sheep—bucks and ewes—of undoubted purity of blood. He will also dispose of a part of his stock of imported FRENCH Merinos.

Gentlemen purchasing from this flock can have the sheep forwarded to the principal Western towns at my risk.

Sept. 1, 1854—tf R. J. JONES, Cornwall Vt.

GENESEE VALLEY NURSERIES,

A. FROST & CO., ROCHESTER, N. Y.,

SOLICIT the attention of amateurs, orchardists, nurserymen, and others about to plant, to their extensive stock of well-grown Fruit and Ornamental Trees, Shrubs, Roses, &c. &c.

The Nurseries are now very extensive, and embrace one of the largest and finest collections in the country, and their stock is far superior to any that they have before offered. It is partly comprised in the following:

Standard Fruit Trees.—Apple trees, eighty varieties; Pear trees, one hundred varieties; Cherry trees, sixty varieties; Plum trees, forty varieties; Peach trees, thirty varieties; Nectarine, six varieties; Apricot, six varieties; and other kinds, comprising every sort of merit.

Dwarf and Pyramid Fruit Trees, of every description, for cultivation in orchards and gardens, have received particular attention. They embrace the following kinds, and comprise nearly the same number of sorts as are grown for standards:

Pears upon the best European Quince stocks.

Apples upon Paradise and Doucain stocks.

Cherries upon Cerasus Mahaleb stocks.

Small Fruits, as Currants, eighteen varieties; Gooseberries, sixty varieties; Grapes, Native and Foreign, twenty-five varieties; Raspberries, six varieties; Strawberries, twenty varieties; and other miscellaneous fruits, as well as esculent roots, in variety.

Deciduous and Evergreen Trees, for lawns, parks, streets, &c.

Evergreen and Deciduous Shrubs, in great variety, including four hundred sorts of Roses.

Hedge Plants—Buckthorn, Osage Orange and Privet; and for screens and avenues, American Arbor Vitæ (White Cedar), Norway Spruce, &c.

Herbaceous Plants.—A very select and extensive assortment.

Green-house and Bedding Plants, of every description.

All articles are put up in the most superior manner, so that plants, &c., may be sent thousands of miles and reach their destination in perfect safety.

Parties giving their orders may rely on receiving the best and most prompt attention, so that perfect satisfaction may be given the purchaser.

The following descriptive Catalogues, containing *prices*, are published for *gratuitous* distribution, and will be mailed upon every application; but correspondents are expected to enclose a one cent postage stamp for each Catalogue wanted, as it is necessary that the postage should be prepaid:

No. 1. Descriptive Catalogue of Fruits for 1854-5.

No. 2. Descriptive Catalogue of Ornamental Trees, Shrubs, Roses, &c. &c., for 1854-5.

No. 3. Wholesale Catalogue or Trade List, just published for the fall of 1854 and spring of 1855, comprising Fruits, Evergreens, Deciduous Trees, &c. &c., which are offered in large quantities.

October 1, 1854.—tf

THE SCIENCE OF NATURE.

A NEW SCHOOL BOOK,

ENTITLED

FIRST LESSONS IN CHEMISTRY AND GEOLOGY,

As Applied to Agriculture.

BY J. EMERSON KENT, A. M., M. D.

A NEW school book—the first American work ever issued as the first book, or "First Lessons in Chemistry and Geology, as applied to Agriculture," designed as the first step for the young, to be used in all our common schools, is now submitted to the educational public. Some indeed protest against the introduction of all modern improvements in making the earth productive; still the great agricultural interests of our nation depend upon a rising generation of practical farmers, who will till the soil as much by a comprehensive knowledge of the laws of chemistry, as by the sweat of the brow.

The subject of agricultural chemistry cannot but soon commend itself to the world as the most important of all studies, and, in fact, the wealth of this country would be doubled within one year were all that saved which is now l st by stupid, bungling agriculture. A volume of recommendations could be given to the public, but it is not necessary.

School Committees and Teachers will be furnished with a copy, gratis, for examination, by mail, post paid, on application to the undersigned. Price 25 cents.

DAYTON & WENTWORTH, Publishers,
86 Washington street, Boston, Mass.

Also, for sale in quantities at F. Cowperthwait & Co., Philadelphia; Cady & Burgess, New York; Phinny & Co., Buffalo, N. Y.; Darrow & Brother, Rochester, N. Y.; William Wilson, Poughkeepsie, N. Y.; H. M. Rulison, Cincinnati, O.; and by all other booksellers in the United States.

N. B.—A few men of the right ability are wanted to travel through every State in the Union, and introduce this work into schools. A liberal commission will be paid. Gentlemen who travel for health or recreation will find this occupation a lucrative and agreeable employment. Address as above. Nov. 1, 1854.—5t

THE HORSE, THE HORSE,

NOBLEST OF DOMESTIC ANIMALS,

AND the one most frequently ill-treated, neglected and abused. We have just published a book so valuable to every man who owns a horse, that no one should willingly be without it. It is entitled,

THE MODERN HORSE DOCTOR,

and is from the pen of that celebrated English Veterinary Surgeon, Dr. GEO. H. DADD, well known for many years in this country as one of the most successful, scientific and popular writers and lecturers in this branch of medical and surgical science. The book which he now offers to the public is the result of many years' study and practiced experience, which few have had.

From the numerous and strong commendations of distinguished men and the newspaper press, we select the following:

Extract from a letter from Hon. John H. Clifford, Ex-Governor of Massachusetts.

New Bedford, May 11, 1854.

DR. DADD—Dear Sir:—I hope that your new work on the noblest creature that man has ever been permitted to hold in subjection (the Horse), will meet with that success which all your efforts in this direction so well deserve. Your obedient servant,

JOHN H. CLIFFORD.

From Hon. Marshall P. Wilder.

Boston, May 13, 1854.

DR. DADD—My Dear Sir:—I am greatly obliged to you for the valuable treatise, the results of your own investigations, which you have recently issued, hoping that it may meet with the patronage of a discriminating community.

I remain yours with great regard,

MARSHALL P. WILDER.

The *Modern Horse Doctor*, by Dr. G. H. Dadd, is a manual of genuine science, and ought to be owned and studied on the score humanity, as well as interest, by every man who owns a horse.—*Boston Congregationalist.*

Dr. Dadd has had great experience in the cure of sick horses, and explains the secret of his success in this volume.—*New York Tribune.*

The author of this work is well known as a most skillful veterinary surgeon. His book is based on the soundest common sense; and as a hand-book for practical use, we know of nothing to compare with it.—*Yankee Blade.*

We know Dr. Dadd well, and are satisfied that he possesses most important qualifications for preparing such a book as this.—*New England Farmer.*

Messrs. Jewett & Co. have just published a very valuable work by Dr. Dadd, a well-known veterinary surgeon, on the causes, nature and treatment of disease, and lameness in horses.—*Farmer's Cabinet.*

This is one of the most valuable treatises on the subject ever published; and no owner of that noblest of the animal race, the horse, should be without it. Especially should it be in the hands of every hotel and livery-stable keeper. To many a man would it be worth hundreds of dollars every year.—*Ind. Dem., Concord.*

By far the most learned and copious work on the horse and his diseases we have ever seen.—*New York Evangelist.*

One of the greatest and most commendable qualities of this work, is, it is *practical* and plain to the comprehension of those farmers and others for whom it is mainly designed. The course of treatment favors generally a more sanative and rational system of medication than that recommended in any previously existing works on farriery. No farmer or owner of a horse should be without this book. Stable keepers, stage proprietors and hackmen we believe would derive profit by having at least one copy hung up in their stables for use and reference by their stable men.—*Daily News, Philadelphia.*

There is more common sense in this book than any of the kind we have ever seen, and farmers and owners of horses would find it a matter of economy to possess themselves of it. It will be of more service than the counsel of a score of ordinary doctors.—*Albany Courier.*

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